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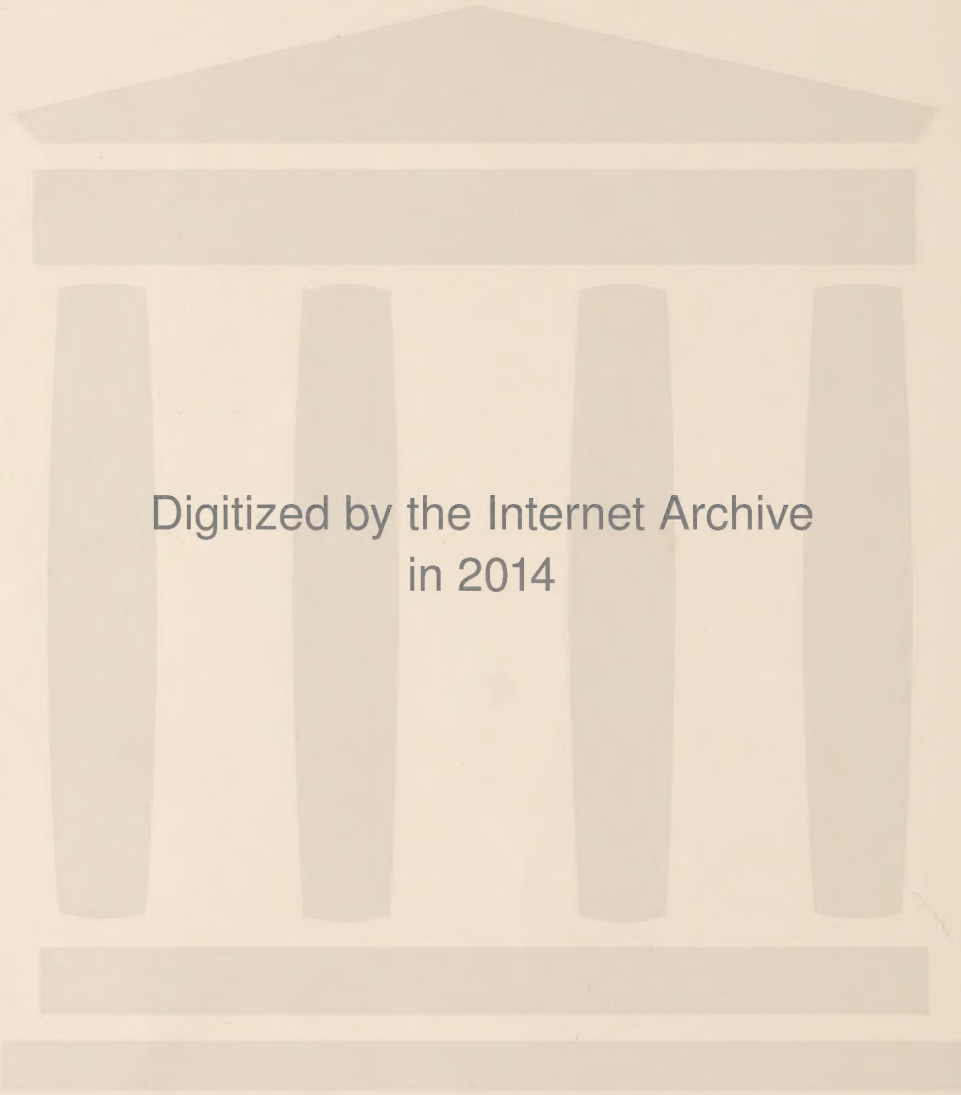


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VIRGINIA MEDICAL SEMI-MONTHLY.

(RICHMOND.)

VOLUME XVI.

APRIL, 1911—MARCH, 1912, INCLUSIVE.

THOROUGHLY INDEXED.

CHARLES M. EDWARDS, M. D.
MANAGING EDITOR.

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DIAGNOSIS AND TREATMENT OF TUMORS OF THE BREAST.

By J. SHELTON HORSLEY, M. D., Richmond, Va.
Professor of Principles of Surgery and Clinical Surgery,
Medical College of Virginia.

Mammary tumors have recently attracted much attention, not only on account of their interesting pathology, but because a study of this pathology aids in an early diagnosis. In probably no department of medicine or surgery is there a more direct relation between prompt and correct diagnosis, and the lowering of mortality and permanent cure.

The earlier a diagnosis is made in malignancy the more important is the diagnosis, as the opportunity for permanent cure mathematically decreases with each day that a cancer of the breast is left. It is the early diagnosis of cancer that is difficult. When the skin has ulcerated, the tumor has become fixed to the breast, and the axillary glands have been involved, diagnosis is easy, but the chances of cure have gone. The responsibility resting upon a physician who deliberately advises a patient to wait until the tumor further develops and the diagnosis becomes plain, is just as great as if the physician was watching the patient bleed to death from a severed artery and was waiting, without any effort to check the bleeding, until some accident might plug the vessel and stop the hemorrhage.

On the other hand, the routine mutilation of every patient who presents a lump in the breast is unjustifiable. It is only by careful study of the clinical and pathological features in early cases that we are able to say which tumors should be operated upon promptly by the radical method and what growths may be extirpated locally. If one of the two operations had to be followed in every tumor of the breast it would be better to do a radical operation than a local extirpation, but such surgery

is unscientific and often unnecessarily mutilating.

The oration on surgery by Warren, of Boston, which appeared in the *Journal of the A. M. A.*, July 15, 1905, has become a classic and shows in the most impressive way the necessity of a working knowledge of pathology by any surgeon who desires to attain distinction in the diagnosis and treatment of tumors of the breast. The classification which he suggests is one that brings the pathology and surgery of this region into harmony. He divides all true tumors into carcinoma and into a group which he terms fibro-epithelial tumors. There is really no true fibroma of the breast, as the so-called fibromas always contain some epithelial elements. The classification, then, is one that depends upon the relative amount of fibrous tissue and of epithelial structures in each of these tumors. The fibrous tissue arises from that found around the ducts. A tumor in which the fibrous tissue predominates is called a periductal fibroma, a periductal myxoma, or a sarcoma, depending upon whether the connective tissue is mature, or is embryonal, or whether it is of a malignant type and consequently sarcomatous. When epithelial tissue predominates the tumor is classed, either as a fibro-cyst-adenoma or as a papillary cyst-adenoma. He also gives a subdivision of hyperplasia in which there is either diffuse hypertrophy or abnormal involution.

Fibromas are most frequent in patients under 30 years of age, and in Warren's series of cases constitute 50 per cent. of all tumors of the breast found between the ages of 20 and 30. Myxoma is a variation of fibroma and differs from it in the character of the fibrous tissue. It is supposed by some that myxomas are merely fibromas in which marked edema has occurred. The connective tissue around the ducts of the mammary gland between puberty and lactation is peculiarly clear and transparent. It is at this age that

fibromas usually occur. Myxoma is found later in life than fibroma and often grows to a large size. Sarcoma arising from periductal fibrous tissue occurs more frequently at an advanced age than benign tumors of the connective tissue type, though in other regions sarcoma usually occurs in the young. It may be differentiated from the benign fibroma by the age at which it appears, by its rapid growth, and by the dilated veins that are often found in the skin over its surface.

The other class of benign tumors, known as the epithelial type, is subdivided into two kinds—the fibro-cyst-adenoma and the papillary cyst-adenoma. A fibro-cyst-adenoma is probably a periductal fibroma in which the epithelial tissue has increased. This class of tumors develops somewhat later in life than the fibromas, as would be expected from the fact that they contain more epithelium, and epithelial tissue tends to become abnormal and unruly only after age has somewhat overcome the inhibition that youth holds over epithelial growths. These tumors are of slow growth and are usually painless.

The papillary cyst-adenoma is, from a diagnostic standpoint, the most interesting of the benign tumors, not only because it is most likely to be confused with cancer in the clinical diagnosis, but because it occurs at about the same age, being most frequently met with after 40 years of age. The growth consists of a typical papillary arrangement and is often referred to as intra-canalicular. Numerous stalks or villi lined with epithelium project from the growth and the whole is contained in a cavity lined with epithelium. These tumors rarely attain large size and are usually hard. The epithelium resembles that found in the ducts. They are of slow growth. They are situated beneath the nipple or close to it. The contents is often hemorrhagic, in which case malignant degeneration should be suspected. In almost all of these cases there is a bloody discharge from the nipple, which is characteristic, and is an important feature in the diagnosis.

The other conditions that must be differentiated are inflammatory diseases of the breast, tuberculosis, abnormal involution and retention cysts. Abnormal involution occurs about the period of menopause and is multiple—that is, there are numerous cysts throughout the gland and sometimes both breasts are in-

involved. It is found most frequently in married women and develops slowly, as a rule. Occasionally, there is a discharge from the nipple of a yellow serum or a watery or bloody fluid, or there may be pus. In from 10 to 15 per cent. of cases abnormal involution results in cancer. Abnormal involution is really a multiple cyst-adenoma, a tumor likely to degenerate into cancer.

A simple rule will help materially in classifying benign tumors of the breast so far as their prognostic significance is concerned if we will recall that the more epithelial elements are found in benign tumors the greater is the danger of change into cancer. Thus, the periductal fibroma, which is quite common under 30 years of age, has an excess of connective tissue and very little epithelial tissue. The normal resistance of youth can hold the epithelium in check and there is but little chance of such a tumor being changed directly into cancer. It may, however, eventually change its own form into a cyst-adenoma by the increasing growth of its epithelium, and so become more likely to be a starting point of cancer. As long as a fibroma of the breast remains a fibroma, there is no danger of malignant degeneration going on in the small amount of epithelial tissue that it contains. The epithelial type of benign tumors, then, can be differentiated from the more innocent kind (the fibrous type) by the age of the patient, by the appearance of a discharge from the nipple in many of the epithelial tumors, by the location of the tumor, and by the fact that fibromas are often multiple, but the differentiation between the epithelial benign tumors and early cancer is often more difficult.

Two forms of *cancer of the breast* are met with—adenocarcinoma and the glandular form. In glandular carcinoma growth may be very rapid, when the tissue soon breaks down and ulcerates and the lymphatic glands are involved at an early stage. Another variety of this form of cancer is that in which growth is somewhat slower and the tissue firm and hard. The third variety, the scirrhus, is slowest of all and the connective-tissue formed is exceedingly dense. Here retraction is at its maximum. In all kinds of cancer there is a tendency to contraction, probably caused by the irritating toxins that are liberated from the cancer cells, and this contraction is, most likely, the natural reaction of tissue against

cancer with a tendency to be protective. The detection of even slight contraction is most important. However, if the growth is rapid contraction is not marked, as it takes time for the formation of connective tissue, and the longer the time the more abundant the connective tissue and the greater the contraction. The exceedingly malignant medullary cancer is, fortunately, rare, and while presenting but little retraction, its rapid and painless growth with slight retraction should suggest the correct diagnosis. These cases are rarely saved by operation, even in the early stages. In abnormal involution when cancer is developing the early diagnosis will depend upon the rather rapidly increasing growth, together with a tendency to contract and the markedly bloody or grumous character of the cyst contents. As Bloodgood has pointed out, the character of the contents of a cyst of the breast during the cancer age is exceedingly important. If the cyst contains a clear, straw-colored fluid, the cyst is benign. If, however, the cyst wall is thickened, either throughout or in localized patches, and particularly if it contains a bloody or a thick grumous fluid the diagnosis of cancer can be made with reasonable certainty.

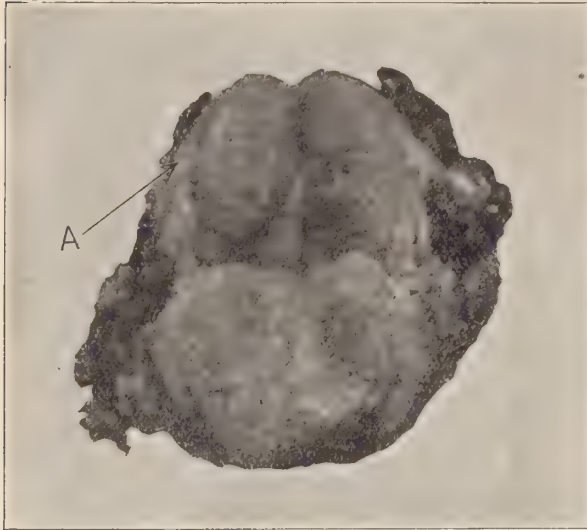
In making a diagnosis of cancer of the breast the age and general history of the patient should be carefully considered. In an analysis of 658 tumors of the breast, gathered during ten consecutive years, Warren found that between 20 and 30 years of age carcinoma occurred six times and represented 12 per cent. of all tumors during this decade. Between 30 and 40 years it represented 60 per cent. of all tumors and the percentage increased until after 70 years every tumor of the breast in this collection was cancer. One of the most important features is the absence of pain in cancer. In *practically every case of cancer of the breast in the early stage there is no pain*, whereas pain is always present in inflammatory affections, and occasionally occurs in benign tumors. The absence of pain in a rapidly growing tumor of the breast in a woman over 30 years of age should excite our profound suspicion of cancer. The presence of retraction in even the slightest degree with absence of pain should enable us to make a diagnosis of cancer in any tumor of the breast. To test retraction or limitation of motion the movement of the tumor in the breast tissue

should be gently tried, and the movement of the breast itself on the fascia of the pectoral muscles and the mobility of the skin over the breast should be carefully tested. Even the slightest adhesion of the skin to the tumor or the slightest limitation of motion of the breast in which the tumor occurs should be noted. If the patient is stripped to the waist with both shoulders equal a cancer will cause retraction and will make the nipple of the affected breast be at a little higher level than the nipple of the healthy breast. If the tumor is benign the nipple on the diseased side will either be on a level with, or lower than, the nipple on the healthy side. This is due to the tendency of cancer to cause contraction and to the fact that a benign tumor does not cause contraction, but its mere weight may bring the nipple lower than normal.

For purposes of clinical diagnosis tumors of the breast might be divided into three classes: First, the class that is clearly benign; second, the class that is clearly malignant; and, third, a doubtful class where the diagnosis cannot be positively made by the symptoms and signs given above. If the tumors are carefully studied this third class will be small, but in tumors of this class it will be found necessary to make an incision for purposes of exploration, and in such instances the patient should always be prepared for immediate radical operation if the exploratory incision shows cancer.

When a tumor is incised for exploration, if it is a cyst and is cancerous or undergoing cancerous change, the whole cyst wall may be thick or it may be thick only in portions. The contents of such a cyst would either be dark and grumous, or bloody. If the tumor is a solid tumor its behavior on incision will give the key to a diagnosis. If it is benign, it has a distinct capsule which, when incised, will retract and the tumor will bulge somewhat into the wound. This is due to the fact that the capsule consists of connective tissue and is a different structure from the substance of the tumor. As the tumor grows it stretches the capsule so when the capsule is incised the tumor, being under pressure, tends to bulge or pop out. In cancer, however, the appearance is totally different. An incision into a cancer discloses no true capsule. Occasionally, there may be a layer of connective tissue, which resembles a capsule, but careful inspection will

show that a real capsule does not exist. The cancer will not bulge into the wound, but will lie flat, just as though the incision had been made into a block of wood. This is because cancer has no capsule and infiltrates the tissue



This illustration shows a section made into the substance of a peri-ductal fibroma soon after its removal. Note the bulging of the tumor into the wound and the retraction of the capsule. "A" shows capsule.

and contracts toward its own center. Consequently, instead of being held under pressure and tending to bulge out, it tends to draw other tissue in.

The inflammatory affections sometimes are a source of error in making a diagnosis of cancer. Of these, the most important are abscesses, acute or chronic, and tuberculosis. In an abscess there is pain and tenderness, though sometimes in a chronic abscess the pain is slight. Abscesses of the breast, in most cases, come on during laceration, and this fact should suggest a diagnosis. There is an absence of retraction and the presence of pain and tenderness, though, as has been said, pain and tenderness are sometimes not marked. The tissue is infiltrated, the skin is involved early, and the growth often does not give the impression of being localized as much as a cancer. One or more lobes are involved. There is no retraction here, as would occur even in the early stage of cancer. No one is justified in doing a radical operation for cancer in a lactating breast without making an exploratory incision immediately before operation.

Tuberculosis is found most frequently in

the third decade. Either a single lump or multiple lumps appear in various parts of the breast, usually in the upper and outer quadrants. Pain is present, though it may not be marked. The skin is involved early. Sometimes fluctuation can be made out. Often the patient has sinuses and a discharge of tubercular products when she presents herself for examination. A history of tuberculosis and an evening rise of temperature is useful in making a diagnosis and the various tubercular reactions may be tried.

I have purposely said nothing about the microscopical diagnosis, because no cancer of the breast should be cut into for exploratory purposes unless the surgeon is in a position to follow the incision immediately by a radical operation if the exploration shows the presence of cancer. The practice that was formerly prevalent of making an incision into a suspected mammary tumor, taking out a specimen for microscopical examination, and doing the operation several days afterwards, cannot be too strongly condemned. Halsted (*Annals of Surgery*, Vol. 46, p. 12,) says: "In cancer cysts the prognosis is quite hopeless if the diagnosis is not made at the operating table." The same is true of other forms of cancer. The exploratory incision frequently disseminates the cancer along routes not normally traveled by cancer cells and in a few hours puts the disease out of reach of the surgeon's knife. If we inoculate an animal we would inject the germs or infect a wound and leave it for several days. Ordinary experience teaches us that after two or three days the animal has become infected if he ever will be. In cutting into a cancer of the breast we cut through healthy tissue into cancerous tissue and necessarily expose the freshly cut vessels and lymphatics which readily absorb the cancer cells we have liberated with the knife. Taken up in this way, the cells are rapidly carried to points some distance from the original incision. If operation is delayed even forty-eight hours after the incision into a cancerous breast a permanent cure cannot be obtained, whereas, if operation is performed immediately after the exploratory incision, the lymphatics will not have had time to carry the cells beyond the mass of tissue that is being removed.

In the vast majority of cases a correct diagnosis of any tumor of the breast can be made by eliciting the symptoms and signs given

above. It is the chief object of this paper to show that a correct diagnosis of a tumor of the breast can be made in most cases merely by the clinical symptoms and signs without resorting to the microscope just as a diagnosis

a competent pathologist should be present who can give an immediate opinion on a frozen section. Under no condition should the incision be left for a few days to be followed by a subsequent operation. Unless the pathologist is competent and experienced he can be of little aid in such work, but even then it is much better for the surgeon to carry the pathology in his own head and fingers than in those of some one else.

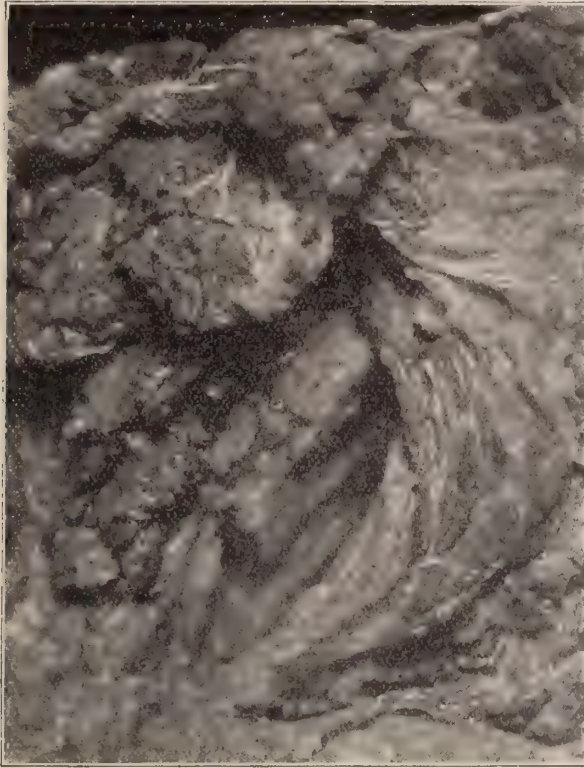
SUMMARY OF DIAGNOSIS.

In differentiating benign tumors of the breast from cancer we will recall, first, that the fibromas, which always contain some epithelial tissue, are firm and encapsulated, are often multiple, and usually occur under 30 years of age. There is no discharge from the nipple and but little, if any, tendency to degenerate into cancer. They are occasionally slightly painful and are sometimes accompanied by neuralgic pain in the breast. Myxomas possess the same general attributes of the fibroma, except they more often occur at a later stage of life, are far less frequent than fibromas, and are often larger. A fibroma may vary in size from a quarter of an inch in diameter to a mass several inches in diameter, but is usually small.

The epithelial benign tumors occur more frequently after 30 years of age. They are often accompanied by discharge from the nipple of a bloody, watery or milky fluid. They are frequently found under the nipple or near it. They are encapsulated, movable and have but little, if any, pain. They have a marked tendency to degenerate into cancer.

Abnormal involution has practically the same pathology as a fibro-cyst-adenoma, and consists of what is really a multiple cyst-adenoma, occurring about the time of the menopause. The growth is usually slow and tends to involve both breasts. In a small portion of cases there is a discharge from the nipple. Ten to 15 per cent. of abnormal involutions result in cancer.

Sarcoma occurs as a rather rapidly growing mass, and, unlike carcinoma, there is no retraction. The skin is involved at a late stage and the axillary glands are rarely ever involved. Sarcomas attain a large size and invade the whole breast at an early stage. They appear to be encapsulated. They tend to form cysts; large veins are often prominent. Sar-



This illustration shows a section into a carcinoma of the breast. The section was made after removal of the breast, as the diagnosis was plain. The tissues cut through are the pectoral muscles and the carcinoma. Note the absence of any capsule and the even appearance of the incision without any attempt at bulging into the wound, as in the illustration of the peri-ductal fibroma.

of malaria, typhoid or pneumonia is usually made by the signs and symptoms of these diseases. Only in a small group of cases will exploration be necessary. The microscopical examination is chiefly of use in studying the tumor after it has been removed, so the surgeon will learn to associate the microscopical appearance and the histological structure of the tumor with the gross appearance of the specimen at the time of operation. In this way the gross appearance will call to mind the microscopical picture of similar tumors that have resembled in appearance and in consistency the one on which he may be operating. It is the ideal condition for every surgeon to study under the microscope every tumor of the breast that he removes. If this cannot be done

coma of the breast, unlike sarcoma elsewhere, usually arises after 40 years of age.

Inflammations of the breast (so-called mastitis) are always accompanied by some pain and tenderness, though in a chronic abscess this may be very slight. One or more lobes of the breast are involved at the same time and the skin and axillary glands are affected early. If near the surface, the skin may break down and sinuses will form. This condition almost always occurs during lactation and every tumor arising in a lactating breast should be incised for exploration before attempting to do a radical operation. Tuberculosis presents somewhat the same signs as abscess. There is a tendency to early breaking down of tissue and the formation of sinuses that are typical of tuberculosis elsewhere. The history of the patient and the course of the temperature often throw light upon such cases. A tuberculin reaction may be tried if necessary to establish the diagnosis.

Retention cysts sometimes result from an injury to the breast, as when a fibroma has been removed or an abscess has occurred the subsequent scar tissue may constrict the duct and produce a retention cyst. They may, however, appear without any such cause. They are found at any age and in either single or married women. They may be distinguished from abnormal involution by the fact that a retention cyst or a galactocoele, which has practically the same pathology, is single. The history of recurring attacks of abscesses will serve not only to render more probable a diagnosis of inflammation, but may throw light upon the subsequent appearance of a retention cyst.

TREATMENT.

There is only one treatment for tumors of the breast that produces satisfactory results, and that is excision. Personally, I have never known a true tumor of the breast to be cured by paste, X-ray or any other treatment except excision. The operation performed should depend upon the diagnosis. If the tumor is benign, the operation of Warren should be performed, which consists of an incision along the under and outer portions of the breast, dissecting the breast freely from the fascia of the pectoral muscles, turning it up, and excising the tumor from beneath. This can be easily done and the wound in the breast drawn together by buried sutures in such a manner as

to leave no deformity. The scar is inconspicuous and is often covered entirely by the pendant portion of the breast.

If the tumor is cancerous, radical operation should always be done. For the past four years I have followed the principles enunciated by Jackson, and have begun with dissection of the axilla. After dividing both pectoral muscles at their insertion and dissecting the tissues of the axilla in one mass, leaving nothing but the fascia of the subscapular and teres muscles and internally the periosteum and the intercostal muscles, the mass of tissue is then stripped up and the breast, muscles and axillary contents are removed in one piece. It is very important to remove all the tissue in one mass, as cutting through it or handling it too roughly is likely to spread the cancer cells into uninfected raw surfaces and so may produce a recurrence. We should be careful to remove a sufficient amount of tissue, particularly of skin and subcutaneous fat around the breast. Handley has pointed out the importance of this by showing that cancer cells not only follow the natural lymphatics to the axilla, but radiate in the lymphatics beneath the skin. The longer the cancer has existed or the more virulent it is, the more extensive the radiation will be. Too much attention has been paid to the method of closing the wound after a radical operation for cancer. The main object should be to remove all the cancer and so save the patient's life and not to operate for cosmetic results. It would be better for the surgeon never to think how he will close the wound until after the growth has been removed. I have never seen an operation for well-developed cancer of the breast that was closed by a nice, straight incision where recurrence did not take place. Undermining and sliding flaps should be resorted to. If the wound can be closed without such procedures it is a very good indication that too little tissue has been removed and recurrence will likely be prompt.

421 W. Grace Street.

LATE METHODS IN THE DIAGNOSIS AND TREATMENT OF GASTRIC DISEASES.*

By J. RUSSELL VERBRYCKE, JR., M. D., Washington, D. C.

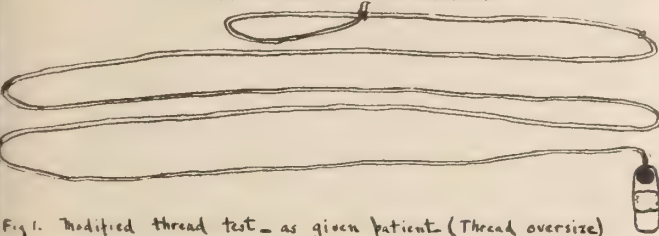
These methods of diagnosis and treatment of which I shall speak have all been originated by Dr. Einhorn, than whom there is no more

*Read before the Medical Society of Georgetown University.

ingenious man in the profession. Most of the procedures are entirely new and may prove far-reaching in their results. Though known to some, these methods are not yet familiar to the profession at large and are not widely used as yet.

I shall consider first the thread impregnation test, described by Dr. Einhorn, in April, 1909. His duodenal bucket is fastened to a No. 5 to No. 8 braided silk thread, and 70 cm.

ILLUSTRATION HALF SIZE OF ORIGINAL



from the end a knot is made. The patient having eaten nothing for supper containing blood or other red coloring matter, at bedtime swallows with the aid of water the bucket and thread until the knot arrives at the teeth, when the rest of the thread is made into a loop and so fastened to the night dress that the knot remains in this position. The bucket remains down all night, and in cases with no stenosis or spasm passes through the pylorus. In the morning the thread is gently pulled up, and, after drying, is examined for the presence of a red or brown stain made by the thread remaining in such close proximity to the ulcer and by rubbing against it, thereby irritating it to hemorrhagic oozing. The lower several inches will be found to be bile-stained and the bucket will be found to contain a few drops of alkaline bile-colored fluid if the bucket has passed into the duodenum. A mark at the distance of 40 cm. from the knot indicates ulcer of the cardia, 44 cm. to 54 cm. of the lesser curvature, 56 cm. to 58 cm. of the pylorus, and above 59 cm. of the duodenum.

Dr. Wm. Gerry Morgan, in the latter part of 1909, devised a modification of the test which has the principal advantage of simplicity and cheapness. He uses a split BB shot instead of the bucket, fastening it to the end of the thread and enclosing it in a gelatine capsule, the thread emerging from a small hole in the end. We have used this simple little instrument many times with gratifying results. Dr. Mor-

gan reported 32 tests on 25 patients before the American Gastro-Enterological Association, at

ILLUSTRATION HALF SIZE OF ORIGINAL



Fig. 2. Positive thread - Ulcer of lesser curvature

St. Louis, this year. Since that time he has had probably a hundred threads. I have tried the test on my own patients about 20 times. From my observations on my own and Dr. Morgan's cases, I can say that I consider the thread test a valuable aid in the diagnosis of gastric ulcer and the only method excepting Einhorn's gastric stamper, an instrument difficult to use, for the exact localization of the ulcer.

A positive test may be looked for in the ulceration of cancer, but I have not seen the test tried in many of these cases. The thread might possibly wound a much engorged mucus membrane, such as rarely occurs in secondary gastritis, as recently described by Pilcher under the name of achlorhydria hemorrhagica gastrica, but surely a stomach in such a condition would require a rest as much as if an ulcer were present. Again, of course, a stain may be looked for in gastric erosions and cirrhosis of the liver.

At times we obtain threads which are stained over such a large area that no attempt at localization can be made. Repetition of the test at a future date may give a smaller and better localized stain. Possibly it might help in these cases to keep the string *in situ* for a shorter time. I have seen the stain present after as short a time as one and a half hours.

Although the performance of the test is not particularly unpleasant to the patient as a rule, still there are a few cases who not only have discomfort but even actual pain and perhaps soreness for several days after. I consider this in itself a valuable diagnostic sign as these cases have invariably turned out to be ulcers. Another thing which I have noted is that often after performing the thread test a positive benzidine reaction for occult blood is present for several days where it had been absent just before. This is more than could be accounted for by the small amount of bleeding induced during the test, and signifies an irritation re-

quiring several days to abate. Never, however, have bad effects been noted of any moment or permanency. I therefore urge the use of this simple test in all cases of stomach disease accompanied by pain or other suggestive symptoms. Ulcers are of very, very frequent occurrence, and every year a greater number of the previously considered functional cases are being discovered to have some organic cause for their troubles. A positive thread is always obtained in ulcer of the esophagus, cardia, lesser curvature, pylorus and upper part of the duodenum, and though the stain might be present in the other conditions before mentioned, still, even under these circumstances, the stomach demands rest.

I shall next speak of the duodenal tube or aspirator. I will not mention Dr. Einhorn's first attempts at catheterizing the pylorus, but will briefly describe his perfected apparatus. It is a modification of the duodenal bucket, using a fine rubber tube in the place of the thread. An air-tight syringe serves to withdraw the duodenal contents. The bucket is

juice mixed with bile; and, (4) If milk is introduced by mouth into the stomach, it cannot be immediately aspirated as it would be if the end of the tube were still in the stomach.

What can we learn from examination of the duodenal contents? If a duodenitis is present, the return will contain mucus not so intimately mixed with the bile. Who of us, in the absence of so-called catarrhal jaundice, would care to make a positive diagnosis of duodenitis *per se* without this means at hand?

An absence of bile can be noted in obstructive gall-stones. A cholecystitis will often be shown by the presence of changed, thick, mucus-containing bile.

Again, in arranging the diet for patients, it is of interest and importance to know what food stuffs can best be taken care of by the intestines since this organ must do the double work of the stomach and bowel. One or the other ferments is often found either decreased or absent.

We have also in this instrument wonderful opportunities to study the action of certain

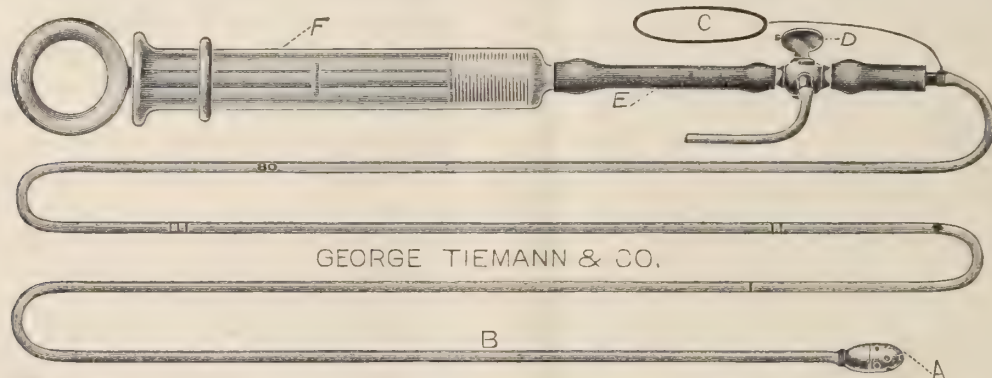


FIG. 3.—Duodenal aspirator; A, Bucket; B, tube; C, loop of thread to retain in place; D, Petcock; F, Syringe.

started down the throat by the physician's pushing it with his index finger over the base of the tongue, and then as the patient drinks water, the bucket, followed by the tube, descends by itself with no discomfort to the patient. After a period varying from one to several hours, the bucket is found to be in the duodenum. How do we know its location?

(1) By the length of the tube which has descended, though this is an insufficient sign, as the tube may be coiled in the stomach; (2) By the feeling. If we make gentle traction a resistance will be felt in the duodenum; (3) By the aspiration into the syringe of golden yellow, alkaline fluid, pancreatic and intestinal

drugs, and thereby further the progress of rational therapeutics. We are at present starting a series of experiments with this end in view. Already it has been discovered by Dr. Einhorn that in a patient taking a mixture of soda and glycerine the duodenal juice does not become foul and putrid after standing 24 hours as otherwise occurs. This has been verified by us, and is an important discovery.

Lack of space forbids my entering fully into the technique of the examination of the duodenal contents, but I will say that a rough estimate of the amount of trypsin and amylase can be obtained by introducing small glass tubes, open at either end, one containing 10

per cent. starch and the other 10 per cent. gelatine, into a few cc. of the juice and allowing to stand for several hours, when, if both ferments are present, the contents of the tubes will have been dissolved.

glass syringe every two hours, or by Dr. Morgan's modification of a container which lets the nourishment enter drop by drop, as in the Murphy salt solution treatment per rectum. A good food for the average patient consists of

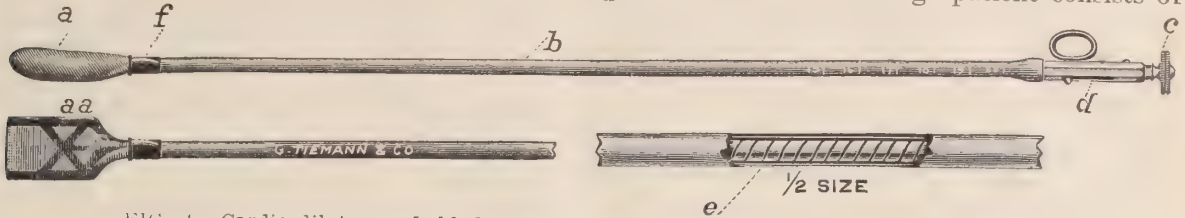


FIG. 4.—Cardio-dilator, a-f, blades closed; aa blades open; c, dial and adjustment screw.

Dr. Einhorn then went a step further, and reasoned that if contents could be drawn out of the duodenum, fluid could also be introduced directly through the tube which is left *in situ* for ten days to two weeks or longer. In certain cases it is essential to give the stomach a rest, particularly some gastric ulcers and pylorospasms. As fasting is not to be recommended, and rectal feeding besides being most disagreeable has been proven by experimentation to be entirely inadequate, this method of duodenal alimentation is a great advance. It has all the advantages of affording the stomach complete rest without the disadvantages of semi-starvation. I have one patient at present under duodenal feeding and Dr. Morgan has had several. It is too early as

milk, ten ounces; sugar of milk, a half ounce, with one egg beaten in. A smaller quantity should be used at first and gradually increased, and when the maximum feeding is reached the interval is made three hours. After the feeding a syringe full of water (warm) should be put through the tube, followed by one of air to keep the tube clean and free from stoppage. Extra fluid may be supplied the body by a quart of salt solution by drop method per rectum every morning.

Cardiospasm has been looked upon with dread as a symptom with a very bad prognosis. It can now be viewed with more equanimity in consideration of the fact that we now have a valuable instrument devised by Dr. Einhorn for the dilation of the cardia. It resembles a

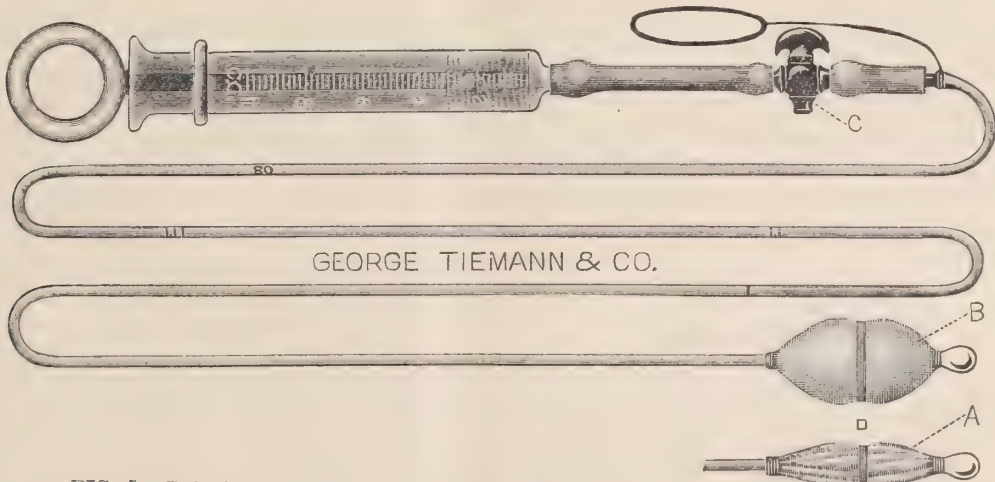


FIG. 5.—Pyloric measures and dilator; A, bag deflated; B, bag inflated.

yet to reach definite conclusions as to results, but certainly, theoretically, we have much to expect.

The feeding consists of fluid, strained through a coarse cloth and heated to body temperature; introduced slowly by means of a

combination of urethral and cervix dilators. Blades protected by being ensheathed in rubber tubing are opened parallel to each other after the introduction of the instrument into the cardia by turning a dial at the oral end graduated to show the degree of dilatation.

I have seen Dr. Einhorn use this and he reports good results.

The latest and one of the most ingenious contrivances is the pyloric measurer and dilator. It consists of a thin rubber bag with a silk covering, assuming when inflated with air a shape something like that of the gas bag of a dirigible balloon. This is connected to a soft rubber tube and swallowed as the duodenal bucket. After a sufficient time has elapsed for it to enter the duodenum, the bag is inflated through the tube by a graduated glass syringe. Gentle traction is then made and when the pylorus is reached a resistance is felt. The cylindrical bag is then pulled slowly through the pylorus, not using much force, however. If resistance is too great, a little air should be drawn out. When it finally slips through, a glance at the syringe shows the amount of air which is in the bag, which is then deflated and withdrawn. By reintroducing the same amount of air, a pretty accurate idea of the size of the pylorus can be obtained by measuring the bag. In treatment, Dr. Einhorn advocates its use in pylorospasm and benign strictures, saving operation in many cases and often with better results.

Some of these procedures belong essentially to the specialist, but the general practitioner can practice, if he will, some of the methods, and should know of all of them. My purpose in writing this paper is to stimulate interest in their use and to explain them to some who have not read Dr. Einhorn's articles from time to time. I feel that nowhere in the realm of medicine has greater advance been made in recent years than in the treatment of diseases of the stomach.

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HYDRONEPHROSIS.*

By DRs. KIRKLAND RUFFIN and LOMAX GWATHMEY, Norfolk, Va.

Hydronephrosis consists of the distention of the pelvis of the kidney and the calices with a watery fluid, containing more or less the constituents of normal urine. There is nearly always the presence of a few leukocytes or pus cells, but when the pus increases so as to be macroscopically perceptible and is accompanied by the general symptoms of sepsis, the

condition is called pyonephrosis; in other words, pyonephrosis is an infected hydronephrosis.

Hydronephrosis is produced by any condition that obstructs the flow of urine from the kidneys, and the nearer the obstruction to the kidneys, the sooner it is produced. Watson and Cunningham¹ say the obstruction, if complete, must be short lived and repeated; if incomplete, must be repeated and long continued, or permanent. It is very interesting to note the various and contradictory conclusions of the different experimenters and clinicians as to the effect of sudden and complete occlusion of the ureter. Ransohoff² says that experimental research shows that sudden and complete obstruction is followed by slight distention and atrophy; and Bradford³ found, in experimenting on dogs, that if the obstruction was removed in from ten to forty days, the kidney would regain its form, but be much smaller in size. Bradford⁴ also found that the ligation and section of the ureter of dogs was followed by pyonephrosis in a considerable number of cases, though in no case was there an infection of the wound. Senator⁵ agrees with Cohnheim that in complete and sudden occlusion, the secretion is diminished and soon stops, followed by atrophy of the kidney; but Albarán⁶ says that experiments show that complete and sudden obstruction of the ureter is invariably followed by the development of hydronephrosis, in which opinion a number of other observers concur. It seems to us that the difference between the positions of these different authorities, is chiefly in the different way in which they use the term. They all seem to agree that there is some secretion of urine, but that it soon stops; that swelling, congestion and finally atrophy of the kidney structure follow: while we have found that none of them claim that there was any large hydronephrosis produced. A practical point in connection with this is the fact that with a kidney free from pus and where it is advisable to get rid of its secretion, it is safe to ligate the ureter and leave the kidney to take care of itself. We know of one prominent surgeon who has done this on eight different occasions without bad results; thereby saving the patient a nephrectomy in addition to the other operation.

The causes of hydronephrosis continuing,

*Read before the forty-first annual meeting of the Medical Society of Virginia, at Norfolk, October 25-28, 1910.

the pelvis becomes more and more dilated; at first the flattening of the pyramids occur; finally, an atrophy of the whole secretion structure, and ultimately its complete destruction, leaving the kidney capsule and the pelvis of the kidney as a wall for the cyst. During all this time, there is a marked tendency to the formation of calculi on account of the urine stagnation, and likewise great liability to pus infection.

Along with the changes in the kidney, there are inflammatory changes outside the capsule, especially along the pelvis and ureter. The uretero-pelvic junction is frequently changed in shape and the position altered so as to render it still more inefficient in draining the pelvis. The upper part of the ureter frequently becomes adherent to the adjacent part of the pelvis, becomes twisted or kinked, and its relation to the surrounding structures is changed. These anatomical alterations are responsible, to a large extent, for the widely varying opinions as to the factors concerned in producing the original obstruction and their relative importance.

The etiology of hydronephrosis may be divided into (1) congenital malformation and (2) acquired conditions, though many of the former may take years to produce the results, and possibly have to be aided by the latter.

Hydronephrosis occasionally exists in the fetus, and sometimes to such an extent as to form a serious complication in delivery, or it may not develop until late in life. Among the congenital malformations may be mentioned valves, kinks, stricture, abnormal position of the orifices of the ureter and the presence of abnormal blood vessels or bands of fascia across the pelvis or upper part of the ureter. The acquired causes are calculus, or blood clot obstructing the ureter; movable kidney, especially if congenitally displaced blood vessels or fibrous bands exist below the pelvis in such a way as to be stretched across the ureter; inflammatory conditions outside the ureter pressing upon it; the pressure of tumors or misplaced organs, such as the spleen; or prolapse of the uterus; pregnancy; cystitis, or tumors in the bladder; hypertrophy of the prostate, or stricture of the urethra. We have seen two very interesting cases of infected hydronephrosis in pregnant women, and in two pregnancies of one of them, which cleared up

entirely after delivery; and we think it probable that many of the aches and pains, in the backs and loins of pregnant women, may be due to pressure on the ureter, causing temporary hydronephrosis. That stricture of the urethra and enlarged prostate do not more frequently produce hydronephrosis is due to the character of the ureteral orifices in the bladder and to the distance from the kidney. A few months ago we had a patient who had suffered six months from retention of urine and overflow as a result of stricture of the urethra, who had no symptoms of hydronephrosis, and who has regained perfect health after the stricture was removed.

The relation of hydronephrosis to movable kidney has been productive of much discussion. Many authors claim it to be a frequent cause, while many others consider that it must be associated with the presence of abnormal blood vessels or fibrous bands over which the ureter is kinked in the descent of the kidney. While the number of cases of hydronephrosis associated with movable kidney is undoubtedly small in proportion to the total number of cases of movable kidney, still Kelly has been able to prove that a large proportion of cases who suffer with movable kidney, have pelves capable of holding more than the normal pelvis holds. These are some of the cases of movable kidney that give symptoms, but in operating on them, we should remember the frequency of other factors in producing the hydronephrosis and should expose the pelvis and ureter to determine this point, and likewise see that the ureter is not encroached on when the kidney is pulled up in the position in which we expect to anchor it. There are quite a number of cases on record where fixation of the kidney has been followed by hydronephrosis.

Fully developed hydronephrosis is occasionally discovered accidentally, simply as a large cyst, in some cases so large as to be taken for an ovarian cyst, without the patient remembering having had any special amount of pain. Ordinarily, however, the pain is sufficient for the patient to call our attention to it and is sometimes very severe and of the nature of colic; it shows a marked tendency to be confined to the kidney region and does not radiate along the line of the ureter and towards the bladder as in the passage of stone.

It is sometimes mistaken for cholecystitis or appendicitis. There may be more or less nausea or vomiting; occasionally there is hematuria; the temperature is slight or absent in uninfected cases. Generally the symptoms are sufficiently pronounced to lead to proper diagnosis if we carefully consider them and thoroughly examine the patient, and they should not be allowed to exist undiagnosed for eight years, which was the average of a number of cases collected by Jones⁷, of Boston, nor to go to the complete destruction of the kidney. On examination, there will be found tenderness on pressure over the kidney and more or less enlargement, according to the size of the hydronephrosis and the position of the kidney. A sudden reduction in size, while being examined, followed soon afterwards by a large flow of urine from the bladder is very strong evidence of hydronephrosis, but this is not a frequent occurrence. The most exact method of diagnosis is cystoscopy and the use of the ureteral catheter. When the ureteral catheter cannot be passed into the pelvis of the kidney, the obstruction makes the presence of hydronephrosis probable. If the catheter can be passed to the pelvis of the kidney the amount of fluid which runs steadily out, not in jets, as in the normal kidney, will show how much the pelvis contains or the amount of boric acid solution that can be injected through the catheter will measure the capacity of the pelvis. Kelly considers a pelvis abnormal in size, which is capable of having more than 12 c.c. boric acid solution injected, without pain, through the ureteral catheter, and if more than 20 c.c. can be injected and the same character of pain produced, which the patient has been complaining of, he considers operation for fixation of movable kidney indicated. W. H. Mayo considers a pelvic capacity of 40 c.c. to 50 c.c. proof of hydronephrosis. The size and shape of the pelvis has been skia-graphed after being injected with a solution of collargol or argyrol. The ureteral catheter often detects the presence of stones partly or wholly blocking the ureter and also lying in the pelvis, the waxed tip being especially valuable. It detects stricture and its size and location and it gives us the length of the ureter, which may aid us in the diagnosis of hydronephrosis as well as hypernephroma; and most important, it determines the capacity of the other kidney for its work.

The treatment of hydronephrosis consists in the removal of the cause as far as possible. The temporary hydronephrosis in pregnant women should be treated by a reclining position and abdominal supporters. Obstructions in the urethra, prostate and bladder should be removed. The hydronephrosis caused by the advance of uterine cancer, through the base of the broad ligament, is so insignificant, compared to the original condition, that it can be ignored. When due to prolapse of the uterus, or the presence of misplaced organs or benign tumors, the condition causing it should be remedied. When it is associated with movable kidney, if there are acute exacerbations of pain or much steady ache or soreness, if the ureteral catheter shows a pelvic capacity of 20 cc. or over, nephropexy should be done; though at the same time the pelvis of the kidney and the ureter should be carefully examined for associated causes, and if bands or kinks are found, they should be straightened out. Abnormal blood vessels, whose supply is chiefly to the lower pole of the kidney, that cause obstruction, have to be dealt with.

We must remember that the renal blood vessels are terminal ones, and, if severed, that portion of the kidney supplied by them is put out of commission; and that the larger the blood vessel, the more kidney structure it supplies.

Hence, large ones are not to be destroyed if it is possible to avoid it. Sometimes simply suspending the kidney in its normal position will relieve the pressure from the blood vessels, and sometimes the pelvic wall can be plicated in such a way as to remove any chance for obstruction by them. However, in many cases, the blood vessels will have to be severed. Stones in the pelvis or in the ureter must be removed.

Ureteral stricture should be dilated with the ureteral catheter, from below if possible; if impossible, from above, or ureteral anastomosis done. If the pelvic outlet is so altered as to prevent proper drainage or form an obstruction, we will have to remedy it by a plastic operation. The results obtained from the different methods show no great advantage one over the other, and the real indication is to use the one best suited to the individual case. The operation which has been more frequently done is that of Trendelenburg, which was first done in 1886, and the first recorded effort to relieve this condition, and is similar

in plan to Finney's operation on the pylorus. Transplantation of the ureter to the lowest point of the dilated pelvis, or an operation similar to Heinicke-Mikulicz's on the stomach, or resection of part of the kidney and pelvis, or plication may each have suitable cases where they will be best. In all these plastic cases, or where the pelvis or ureter have been opened, the use of the fibrous fatty flap from the capsule of the kidney to cover up the line of suture as suggested by Mayo, is most valuable. He has shown with the use of it, that these wounds will heal kindly, even when very imperfectly sutured.

The infected cases should be cleaned up with urotropin before operation, if possible. If this is impossible, nephrectomy may be done, or it may be best to drain through the kidney and later, if necessary, do nephrectomy. Large hydronephretic kidneys with complete destruction of the secreting structure should be removed; where there is some of the secreting structure left, we have to be guided, as to the question of removal, by the capacity of the other kidney.

1. Genito-Urinary Diseases, Vol. II, p. 129.
2. Keen's Surgery, Vol. IV, p. 219.
3. Ibid.
4. Progressive Medicine, 1908, IV, pp. 114-115.
5. Nothnagel's Encyclopedia of Practice of Medicine—Diseases of Kidney, p. 354.
6. Progressive Medicine, 1907, IV, p. 117.
7. *Boston Medical and Surgical Journal*, Vol. CIX.

SOME INTERESTING MASTOID CASES.*

By JOHN R. WINSLOW, B. A., M. D., Baltimore, Md.
Clinical Professor of Nose and Throat Diseases in the University of Maryland; Laryngologist to the University Hospital; Surgeon to the Baltimore Eye, Ear and Throat Hospital, etc.

I am led to present the following cases which have occurred recently in my practice, in the belief that, while they may not be infrequent in the practice of those having extensive clinical facilities, to most of us they are of sufficient interest and rarity to warrant their being recorded.

ACUTE SUPPURATIVE MASTOIDITIS — SEROUS
MENINGITIS—MASTOIDECTOMY—LIMITED
DECOMPRESSION—LUMBAR PUNCTURE—CURE.

About 8 P. M., April 8, 1910, I was called by Dr. Henry F. Hill in consultation upon the case of Mabel J., white, aged 5 years, who had been suffering for some weeks with a running

right ear, under the care of a country practitioner. She lay in bed with her head slightly thrown back and neck somewhat stiff, widely dilated pupils which did not react to light nor manifest accommodation, giving a fixed staring expression. Patient restless, whimpers constantly and exhibits hyperesthesia of the general surface of body.

There was marked pressure tenderness over the mastoid antrum and tip, with slight swelling. Tongue protuded in median line, but quiveringly. Abdomen sunken but not rigid (not scaphoid). Patient complains of abdominal pain. Slight jerking of the arms; legs normal. Reflexes markedly obtunded. Kernig's sign present. Has been vomiting frequently.

Believing the patient to be in a most critical condition, I sent her to the University Hospital at once and operated about 10:30 P. M. Temperature 100½, pulse 160, leucocytosis 24,500.

While being anesthetized, at my request Dr. R. P. Bay withdrew about half an ounce of cloudy fluid, under high pressure, by spinal puncture; this showed no pus or micro-organisms.

The usual simple complete mastoid operation was performed, and only a minimal amount of pus found in the antrum and mastoid cells. The lateral sinus was exposed and found healthy.

A circular opening was then made through the temporal bone above the meatus, and the dura exposed over a circular area about an inch in diameter; it presented a normal appearance. The wound was packed with gauze and partially closed.

The following day the patient seemed improved, temperature normal and pulse 125 (April 9th). This continued, and on the second day after operation (April 10th), the pupils became smaller, and reacted to light and accommodation; the knee and patellar reflexes were increased on the right side, but absent or minimal on the left side. No nausea nor vomiting.

On the third day following operation (April 11th), the patient did not seem so well, pulse 135, pupils dilated and generally irritable. I had Dr. Bay again perform spinal puncture, but no fluid was obtained. Partly on this account and partly because the patient was passing an inadequate amount of urine (9 ounces),

*Read before the Southern Section of the American Laryngological, Rhinological and Otolological Society, at Lynchburg, Va., January 21, 1911.

I put her upon three grain doses of urotropin, and subsequently helmitol (April 12th) every three hours. This resulted in a marked improvement in her condition, her reflexes became normal and all signs of meningeal irritation vanished. The urine increased to 17 ounces.

At this time a von Pirquet tuberculin test was made, which proved negative (April 14-17).

The patient's symptoms remained fairly constant, temperature practically normal, sometimes a little above or a little below, pulse weak and very irregular, varying from 100 to 130, and requiring constant stimulation.

On April 18th the patient's condition was not so good; the urine had decreased and the pupils were again dilated and did not react to light. Upon inquiry, I found that the helmitol had been discontinued and I ordered its readministration. It is a noteworthy fact that whenever this agent was discontinued the urine was promptly diminished, the temperature raised and meningeal symptoms appeared, which were promptly remedied by its resumption. The wound had been regularly dressed, but on the seventh day after operation looked unhealthy and indolent; at this time I began soaking the gauze in Peru balsam.

In a week's time (April 25th) both the wound and the patient were greatly improved, and on April 28th the patient was discharged to be dressed at home by Dr. Hill.

Dressings were continued until June 18th, when the patient returned to her home in Virginia. During this period she suffered with an attack of iritis, the origin and significance of which could not be determined. The patient was seen five months later (November, 1910,) by Dr. Hill, who described her as a "robust, hearty, country girl." Both mastoid and tympanum were completely healed.

ACUTE SUPPURATIVE MASTOIDITIS AND PERILABYRINTHITIS (?) MISTAKEN FOR CEREBELLAR ABSCESS—OPERATION—CURE.

Henry A., white, aged 48 years, was brought to me by Dr. G. H. Brown, of New Windsor, Md., on May 12, 1910. About four months previously the patient was sick with an attack that was diagnosed as "grip and neuralgia." Early in the morning of February 17, 1910, following severe earache, the left ear ruptured spontaneously and discharged. No previous ear trouble had existed. Every day since he has had sharp pains over the head generally;

during the entire day is unable to work, and cannot sleep at night. His general physical condition is poor; he is excitable and hysterical, crying readily at times.

While entirely intelligent, his cerebation seems slow, speech also slow. He has a staggering gait, movements inco-ordinate and can only walk a few feet unsupported. Upon standing with the eyes closed he sways to the left side. Tongue movements normal. He has no nausea nor vertigo. Complaints of diplopia and blurred vision. Ophthalmoscopy (Dr. Davis) shows the left eye-ground normal and slight papillitis in the right. No nystagmus. Temperature 98 degrees, pulse 95.

Examination discovered abundant pus in the external meatus (pure streptococci on staining). Granulations and necrotic bone were found at the posterior superior angle, and a fistula of the posterior bony wall leading backward and upward.

Despite the absence of external pain or swelling, a diagnosis of mastoiditis and necrosis was made, and the patient sent to the University Hospital for operation.

Hesitating between a diagnosis of labyrinthine or intracranial complication of mastoid abscess, I consulted my colleague, Dr. I. J. Spear, neurologist to the University Hospital, who made a diagnosis of cerebellar, and, possibly, cerebral abscess.

The radical mastoid operation was performed May 13, 1910, at 3:30 P. M. Temperature $97\frac{3}{5}$, pulse 80, leucocytosis 10,400. A sclerosed and contracted mastoid, with the sinus far forward, was encountered; this was accidentally, and the cerebellar dura below, was purposely exposed, and both found normal.

A good sized antrum was found, retracted well up beneath the linea temporalis, which contained some granulations and a drop of pus (staphylococcus aureus on culture). Extensive necrosis of the posterior bony wall existed. The mastoid and tympanum were curetted thoroughly, but as the ossicles seemed healthy, the drum was freely incised and left in position. (Heath modified radical operation.)

At my request, Dr. R. P. Bay exposed the temporo-spheroidal dura above the tympanum, over a circular area of about one inch, and incising the dura, inspected the brain itself; both of these structures seemed absolutely normal, as had the cerebellar dura, and further

investigation was not deemed justifiable at this time. The dura was sewed with mattress sutures and the scalp closed. An Allport flap was made for the mastoid wound, which was sutured with silk, and the usual dressings applied. Convalescence continued without incident or interruption.

Prior to operation the patient had been put upon five-grain doses of urotropin, which was continued until May 18th (six days). Patient left the hospital on the twelfth day after operation in good condition. On the twenty-fourth day (June 7th) his sight and diplopia had improved, he had no dizziness and could walk alone. Wound healing finely and epithelial streaks appearing along the mastoid ridge. Dressings every second day.

On June 9th, I skin-grafted a rather large area of the posterior mastoid surface with a graft taken from the arm (Schleich); this subsequently "took." Patient returned to his home and was dressed by his family attendant, being inspected by myself until July 9th.

From July 9th to September 17th the patient was dressed at home, without inspection, owing to my absence in Germany.

Upon examination at this time, I found that the wound had entirely healed, but that the family doctor, who had no previous experience in such cases, had packed the meatus in place of the wound, permitting adhesions to occur between the facial ridge and the adjacent bony wall, thus shutting off an undrained space at the bottom of the wound. It was, therefore, necessary to reopen and curette this space and pack the wound from the bottom. From this time healing progressed uninterruptedly under the joint care of Dr. Pearce and myself, and was complete about December 31, 1910 (seven and three-quarter months).

When seen and examined January 14, 1911, the patient looked fat and hearty, felt well and able to work, but could not suddenly rotate head without dizziness. Heard C64 at a distance of one inch, and C512 at four inches.

Upon reconsideration of this case and its manifestations, in the light of increased knowledge, I am convinced that an error of diagnosis was made, and that I was dealing with a condition of perilabyrinthitis and hyperemia of the labyrinth consecutive upon acute suppurative mastoiditis. The rapid and permanent recovery of hearing following the operation seems to me to bear out this belief.

A CASE OF ACUTE SUPPURATIVE MASTOIDITIS AND
COMPLETE DESTRUCTION OF THE CELLS;
EXTENSIVE EXPOSURE OF DURA, WITH-
OUT CEREBRAL SYMPTOMS—CURE.

On April 3, 1910, I was called in consultation by Dr. Gibson Porter to see Eleanor B., white, aged 11, who presented a profusely discharging right ear of about three weeks duration, following grip. Patient had been running temperature, but had improved greatly under a boric acid wash, and had not been seen by the doctor for several days. Her present temperature at noon was 99½.

The canal was filled with thick pus, and there was distinct, but not marked, tenderness over the mastoid antrum and tip. I ordered formalin irrigations 1 to 5000, under which the patient improved and was able to come to the office for treatment.

On April 9th, finding that the perforation in the drum had contracted to a small central opening, I put the patient under gas at the Baltimore Eye, Ear and Throat Hospital and did a free myringotomy. The patient was sent home and hot irrigations and applications ordered.

April 11th, the patient's temperature was 99½, and there was increased tenderness over the antrum and especially at the tip. I insisted upon operation. This was performed April 12, 1910, at the University Hospital; temperature normal.

Upon retracting the periosteum, a small perforation was found over the mastoid antrum, from which pus exuded; the mastoid was filled with pus and granulations, and the operation was performed mainly with the curet. The mastoid process seemed to be "bunched up" so that the wound cavity, in place of the usual ovoidal, presented a more or less quadrilateral shape. The entire roof of the epitympanum and antrum was destroyed, exposing the dura over an area of half an inch or more. The dura must have been bathed in pus for a long period, and yet there had been no cerebral symptoms whatever.

A complete simple mastoid operation was performed and the wound filled with blood clot and closed, except for a small opening at the tip; the clot broke down partially on the third day, and the wound was packed with gauze. Complete healing in a month and a half.

This case is in marked contrast with the preceding two, which presented profound cerebral symptoms, although but little pus was present and no exposure of the dura existed, bearing out the contention that cerebral infection occurs mainly through the internal ear.

CHRONIC MASTOIDITIS—NECROSIS OF EPITYMPANUM AND DESTRUCTION OF OSSICLES—
FISTULA THROUGH FACIAL CANAL.

Albert H., white, aged 19 years, was referred to me June 2, 1908, by Dr. T. H. Cannon, with the following history:

Has had discharge from the left ear off and on for about one year, following grip—the last period for about three months. Is deaf in left ear, has frequent attacks of earache, and headache in frontal and temporal regions with remissions. These attacks usually last two or three days; has just recovered from one.

Now presents tenderness on pressure over the mastoid, and had general malaise and night sweats last week, but, no chills.

Upon examination through the speculum, a granuloma was seen at the upper inner angle of the meatus, deep down in which it covered an area of denuded bone. Chronic mastoiditis and necrosis was diagnosed, and immediate operation urged and accepted. This was performed July 8, 1908, at 3:30 P. M., at the University Hospital; temperature 99½, leucocytosis 12,200.

A modified Stacke radical mastoid operation was performed; the tip and lower portion of the mastoid being sound were let alone; the antrum and aditus were filled with granulations, and a fistula of the posterior bony wall the size of a small quill was discovered apparently directly through the site of the facial nerve; this nerve was not, however, seen, nor were there any symptoms of its being affected. The roof of the epitympanum was carious, but no fistula was present there or in the temporal region. The floor of the tympanum was covered with granulations, which were removed, together with the remains of the carious malleus.

A modified Panse flap was made for the wound cavity and the wound packed and closed with silk sutures—healing in about three weeks under gauze packing through the meatus.

ACUTE MASTOIDITIS, DOUBLE EPIDURAL ABSCCESS—ABERRANT MASTOID CELL?

Charles H., white, age 36, was referred to me February 22, 1909, by my friend, Dr.

Fairfax G. Wright, of Chambersburg, Pa., with the following history:

Had grip four weeks ago, followed by earache in the left ear; this was incised, permitting free discharge; for a week has been running an evening temperature and has manifested severe pain and mastoid swelling. No external aural discharge at time of examination; temperature 99 degrees, canal filled with pus, tenderness of postero-superior angle of meatus. Tenderness and swelling *above* rather than over the mastoid. No previous ear trouble.

Acute mastoiditis was diagnosed and immediate operation urged. Patient was sent to the University Hospital and operated upon February 23, 1909, at 2 P. M.; temperature 99, leucocytosis 15,500.

The usual incision was made and a complete exenteration of the mastoid cells effected; the mastoid was broad and rather dense. Above the linea temporalis a fistula was found running down to the dura; this was opened up and the dura exposed over an area of one-half by three-fourths of an inch, liberating a trace of pus; dura healthy.

A few granulations were found in the mastoid antrum. About half an inch above the tip and behind it, a cavity was found into which the end of the little finger could be inserted; this seemed to have bony walls except over a small area posteriorly, and contained from twenty to thirty drops of pus. It was thoroughly cleaned of granulations. I have never been able to satisfy myself whether this was an aberrant posterior cell at the tip, or an epidural abscess which had gravitated downward and eroded into the tip of the mastoid.

The wound was packed with iodoform gauze and partially closed with silver wire. Patient discharged from hospital and sent home for continuance of dressing by Dr. Wright; ultimate cure.

CONTRACTED SCLEROTIC MASTOID, IMMEDIATE
UNCOVERING OF THE ANTERIORLY SITUATED
LATERAL SINUS.

Thomas S. E., white, aged 20 years, consulted me June 26, 1910, upon the advice of his physician, Dr. G. H. Brown, of New Windsor, Md. He had a suppurative right ear of six to seven years' duration, following scarlatina. A moderate amount of thick secretion of foul odor was present. The right drum membrane was entirely destroyed and the

remnant of the malleus was imbedded in the floor of the tympanum. Hearing reduced to two inches for C" fork. He is dizzy at times, but has no nausea; becomes faint upon mopping or probing the ear. Has had the ear under treatment of his family physician for past two years, awaiting the completion of his college course.

Radical mastoid operation was advised, and undertaken at the University Hospital, June 27, 1910, at 8:15 A. M. Foreseeing difficulty, the cortex was perforated with Dr. W. H. Hudson's cranial augur, uncovering immediately the lateral sinus over an area three-fourths by one-fourth inch; this was closely applied to the posterior meatal wall, which was not over one-eighth of an inch thick. The whole mastoid was sclerotic and contracted, containing absolutely no cellular structure. By chiseling backward and downward from the meatus, I discovered a minute antrum much higher up than the normal location. The embedded malleal remnant was removed and the tympanic mucous membrane cautiously everted, using adrenalin and the headlight. The tip of the mastoid was not opened up. A modified Koerner flap was made and the wound closed with subcutaneous silver wire suture. Gauze packing of canal. Uneventful, though somewhat protracted, convalescence; wound epidermatized September 15, 1910.

Had this case been operated upon by ordinary methods, the sinus must inevitably have been wounded. The use of the X-ray might have furnished valuable information. Sohler Bryant's method with the front bent gauge would have just fitted this condition.

114 West Franklin Street.

APPENDICITIS--OBSERVATIONS AND DEDUCTIONS, DRAWN FROM THE HISTORIES OF ONE HUNDRED AND THIRTY CASES THAT CAME TO OPERATION.*

By W. LOWNDES PEPLE, M. D., Richmond, Va.

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When I first heard the assertion that appendectomy constituted one-fifth of all the operations done by the general surgeon, I did not believe it. Investigation and enquiry, however, proved it to be correct, and this subject immediately took on a new element of

interest. It occurred to me that a careful reading of the records of a number of cases might bring out other facts of interest, and possibly also of value. When once a subject is mastered, we Americans are rather prone to toss it aside, and to pass on to newer, bigger and more difficult problems and to bend our energies in solving them.

Theoretically and intellectually we have mastered the problem of appendicitis. We know just what to do, and, better still, we know just when to do it. But are we following the rules we have formulated? Have we finished educating the laity in regard to this disease? Why is there still a high mortality if we know what to do and when to do it? In what class of cases is the mortality highest, and how can this be reduced? In what class of cases do complications and sequelae occur? What becomes of the cases not operated upon. These and many other questions crowded in upon me insistently demanding answers.

Therefore, I took from my own operation record 130 consecutive cases of appendicitis, omitting appendectomies done in the course of other abdominal work, regardless of the condition of the appendix.

Endeavoring to make the facts answer some of the foregoing questions, I made the following headings:

1. Number of sub-acute, chronic and interval cases;
2. Number of acute cases not drained;
3. Number of acute cases, doubtful, and drained for safety;
4. Number of acute cases drained for abscess;
5. Number of acute cases drained for diffuse peritonitis;
6. Number of attacks recorded in each case;
7. Number of hours, in all acute cases, elapsing from the earliest symptom to the hour of operation;
8. Early and late complications in each class of cases;
9. Deaths, and the class of cases in which they occurred.

There were 50 sub-acute, chronic and interval cases; 29 acute, not drained; 4 acute, drained for safety; 18 drained for abscess, and 29 drained for diffuse peritonitis.

From this it will be seen that 80, or about 60 per cent. of all cases, were acute, while only 50 availed themselves of the interval, or were

* Read before the Shenandoah Valley Medical Society, at Harrisonburg, Va., February 15, 1911.

operated on when the symptoms were subsiding.

Fifty-one cases, or about 62 per cent. of all acute cases, had to be drained.

The average length of time from the earliest symptom to the time of operation was 27 hours in the acute cases not drained; the longest time was 96 hours, and the shortest 8 hours.

The average length of time in the abscess cases was 100 hours; the longest being 11 days, and the shortest 12 hours.

The average length of time in the cases with diffuse peritonitis was 70 hours; the longest was 7 days, and the shortest 20 hours.

The total number of attacks recorded for the 130 cases was 262. This would undoubtedly be much larger had this item been more closely ascertained in the earlier histories, as one attack only is credited when no mention is made of the number of attacks. Sixty-two cases are recorded with but one attack. It took 200 warnings to drive the other 68 patients to the operating table.

If there is one generally accepted rule in this disease it is to operate early—to save life, to save complications, to save expense, and to save time spent in bed. How are we keeping this rule which we ourselves have made, and all recognize? Sixty-two per cent. of all acute cases were too late to close the wound—51 out of 80. Eighteen cases had abscess, and 29 had diffuse peritonitis. Let us look and see whether it was the severity of the type of infection, or was it rather a question of time? The average duration of acute cases closed without drainage was 27 hours; for diffuse peritonitis, 70 hours, and for abscess, 100 hours.

There is no one who appreciates the many, varied obstacles to early operation more fully than I do, and I have given much serious thought to this phase of this great problem. For the greatest good to the greatest number, we must have one rule: Operate in every case as soon after the diagnosis is made as possible. Fix some time limit, say 24 hours, and work with this goal in view. With something definite to work to, we will operate earlier, save more lives and drain fewer patients.

In the first 24 hours the fight is to save the abdominal wall; to close it neatly and strongly for the early resumption of work. The passing of the second 24 hours, in those cases, which

grow progressively worse, marks a dramatic crisis: all minor considerations sink into insignificance. It is now a fight for life. It has seemed to me that too much stress cannot be laid upon this element of time. There is no more danger in removing an inflamed appendix than a quiescent one. Many an appendix has ruptured waiting for the fancied golden interval which did not come.

Again, why should a man lie a-bed for a week recovering from appendicitis, when he could, with no more discomfort and far greater security, be recovering from an operation for its cure?

Let us turn back to the figures and see if they bear out these statements. Of the 29 acute cases closed without drainage, all recovered without complications or sequelae. The 50 interval cases did likewise, and be it remembered that many of these were sub-acute: the organ was still markedly inflamed, but operation was done to guard against a possible rupture and to save loss of time in bed. The four cases drained as a means of safety all recovered without complications or sequelae. This leaves all the complications, sequelae and deaths to the two remaining divisions, abscess and peritonitis cases.

Of the 18 abscess cases, 2 died: one from the rupture of a second abscess not discovered at the time of operation; the other from a progressive peritonitis. Of the 16 who recovered, two have small herniae, and one was operated on for sub-acute obstruction caused by adhesions about the cecum. The average duration of these cases, be it remembered, was 100 hours.

Of the 29 cases of diffuse peritonitis, 8 died. Of the 21 who recovered, one had an acute obstruction on the 10th day, which, fortunately, righted itself. Two have small herniae, which give no trouble; and one was operated on for a large hernia. The average duration of these peritonitis cases was 70 hours. Three of the eight who died were children.

To again refer to the element of time in its relation to mortality and morbidity, all deaths have been in cases of more than 48 hours duration. Operations done for appendicitis while it is still appendicitis should have no mortality. Operations for appendicitis while it is still appendicitis should have few, if any, complications or sequelae, and a definite period of convalescence of two weeks. Operations for

appendicular abscess and diffuse peritonitis are attended by death rate high at best, but increasing with every hour of delay, and for those who recover a long, indefinite, painful, expensive convalescence, with a possibility of obstructive adhesions, and a probability of hernia in the weakened abdominal wall.

What are we going to do about it? Is there any way of reducing the mortality with conditions as they are? With the introduction of the Fowler-Murphy-Ochsner treatment after operation, we seem to have reached our limit in life-saving in these late cases. But there is still one possible means by which a further gain may be made. It is by working out a correct symptomatology in appendicitis in young children. I do not recall a case of appendicitis in a child under five years of age operated on before rupture, and I have heard men of wide experience make the same statement. What does this mean? It means that a child with appendicitis presents no such train of symptoms as the adult, and it is only after rupture and the development of peritonitis that the symptoms of the two approach and parallel one another. Children stand peritonitis badly. Three of my eight deaths from peritonitis were in children; other operators report the same high death rate. It is, therefore, imperative that we diagnose these cases earlier if we are to hope for improvement in this class of cases.

I note that three of my cases in older children who recovered occurred during attacks of acute tonsillitis. A visiting physician once called my attention to the frequency with which appendicitis followed attacks of measles. Here we have two clues to follow. The lymphatic tissue of the appendix becomes involved just as do the lymph follicles of the tonsils in tonsillitis and measles. Let us watch our children more closely during the acute infectious diseases: let us look for abdominal symptoms early, and view them anxiously and critically until a correct symptomatology is noted and recorded for all men.

Among the peculiar turns and vagaries of this disease may be mentioned the case of a little girl of twelve, who presented a moderate sized, well defined abscess internal to the cæcum and not adherent to the abdominal wall. She had experienced some discomfort in the abdomen for a week, but had not lost a day

from school. The family physician was called in on discovering the lump, and he brought her immediately to the hospital.

While most of the perforative cases and many others have contained fecal concretions, the only real foreign body I have found was a number 7 shot, probably eaten with squirrel or rabbit.

A rather puzzling abscess case was in a very fat woman known to have a large tape worm. I first expelled the worm with pelleterine, and then removed the appendix and drained the abscess.

A diagnosis that most keenly interested me was one of acute appendicitis, complicated by an inflammation of the right ureter. I had not seen this diagnosis made prior to operation before, and it was with great satisfaction that I peeled the appendix out of a soft bed of fresh inflammatory products just over the course of the ureter, and with keen interest that I watched the ureteral cells, pus and blood corpuscles grow daily less and less and disappear.

As to appendicitis not operated on, I think I can recall most of the cases I have seen. One had a typical, well-marked attack thirteen years ago, and has had no subsequent attack. One declined operation, and has since been lost sight of. Another declined operation during his first attack, recovered, and had a narrow escape in a second attack, for which he was operated on six weeks later. There was a boy with a history of one previous attack, whose parents are waiting for a third.

A rather unique case gave birth to a seven-months baby five minutes after getting into the hospital, after a 40-mile railway trip. She had a well-marked sharp attack, but I felt justified in waiting under such peculiar circumstances. Her courage subsided with the inflammation, however, and she declined operation. I made a careful pelvic examination before she left, and found her tubes perfectly normal, thus eliminating this source of possible error. A year has gone by now and she has had no subsequent attack as far as I can learn.

One case of a large abscess that ruptured I declined to operate on, as the man was cold up to the waist, and practically moribund. He lived eight hours.

A particularly interesting case was an acute perforative appendicitis which occurred in a

hospital in a young man suffering with pleurisy and broncho-pneumonia. He gave a history of previous attacks of appendicitis. Operation was advised and declined. He fought out the pneumonia and died of peritonitis some four or five days later.

A most pathetic case was a young man in poor circumstances, with a wife and several children, who, on account of deep religious convictions, would not call in a physician. He suffered for four days with pain, and actually walked about for two or three more with well advanced peritonitis. I was called in the day he was seen by a physician, and advised the continuance of the Ochsner treatment which he had inaugurated before my arrival. This prolonged his life several days, whereas I am convinced that an operation would have terminated it in a few hours. This is the only case of diffuse peritonitis in which I have used the Ochsner treatment.

As to this method of treating diffuse peritonitis inaugurated by Ochsner, it is my experience and observation that it is a most estimable post-operative measure, especially, coupled with the Fowler position and the Murphy method of giving saline. If substituted for operative treatment, it will unquestionably improve one's operative statistics. There is a phase to it, however, of great practical importance, and yet seldom referred to: it is the crippled condition of the abdomen resulting from the inflammatory changes in those cases which do recover. I recently assisted in an operation on such a case, and I could but compare the abdomen to a well ordered farm that had hastily been converted into a battlefield. The fences are thrown down, the orchard is cut away, outbuildings have been burned, fresh earthworks run across the wheat field, the roads are demolished, the soil is ripped and torn, and everywhere from garden to pasture is seen the gaping scar of hoof and tire. It will make a fine place for another battle tomorrow, but it will never be a decent farm again.

1000 West Grace Street.

Dr. S. B. Moon

Has been appointed to succeed the late Dr. Hoen as director of the Pasteur Institute of Virginia, at the University College of Medicine, Richmond.

TREATMENT OF ADVANCED CASES OF APPENDICITIS.*

By J. NEWTON LEWIS, M. D., Roanoke, Va.

In the earlier days of the study of appendicitis many more cases of the advanced type presented themselves than at the present time. Dr. Willard Parker, of New York, in 1867, was the first in America to take the most important step in the development of the surgery of the appendix, and the important object of his writing was to declare what good results were likely to attend an early incision, and to counsel its wider adoption.

By the discovery and adoption of antiseptics this advice received impulse and advancement in the following year by Dr. Lawson Tait, that great pioneer in our art. Since that time there have been such great strides in abdominal surgery and asepsis that one seldom meets with an advanced case of appendicitis in the cities, towns or thickly settled districts; but these cases are almost always found in the sparsely settled country where the doctor is hard to get and the people have not been educated to extreme dangers of a neglected case as compared to the almost complete safety in an early operation.

The cases to which my paper refer are those which have gone to suppuration and pus formation, with adhesions of coils of the intestines and the onset of ileus with its distressing and fatal symptoms. The condition of paresis of the bowels is due to the absorption of septic material and peritonitis. If the surgeon simply makes an incision and removes the appendix with drainage, and does not relieve the extreme distention of the bowels, his patient will die and his operation prove worse than useless. Almost all can recall some such cases that have occurred in their practice, and I have in mind no less than four that came under my care in the past years. I believe now that had I adopted the procedure which I will describe to you, these patients would be living to-day. But in those days I had not done as much surgery as I now have; neither had I ever heard of its having been done.

I can best avoid reiteration by describing a case on which I recently adopted this procedure: The patient, aged 68 years, a fairly robust farmer from the mountainous district,

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had been taken with severe pains in his abdomen, nausea and vomiting, and very little rise of temperature. He took a cathartic, which moved his bowels well, but the pain localized in his right side, and continued there. He had been afflicted for a long time with an inguinal hernia, though it had not come down for some years. He attributed the pain to this and did not call his doctor for three days, during which time he did not have a satisfactory bowel movement.

When the doctor came, he was misled by the absence of rise of temperature, slow pulse and history of hernia. He gave cathartics without much avail, and two days later was called again, when the patient showed great distention and consequent distress. He recognized a case of obstruction of the bowels, and attributed the cause to adhesions from the old hernia. With this idea in view he brought the patient to the Lewis-Gale Hospital, where, upon examination May 14, 1910, I found the following conditions—viz., great distention and distress, anxious mien, some vomiting of stercoraceous matter, temperature 100° F., with a pulse of 68, tenderness and pain low down in the right inguinal region and bowels not moved for five days.

On account of the age of the patient and his extreme condition, we hesitated to subject him to an operation. However, he was etherized and the abdomen opened through an incision made along the right rectus muscle. I found the bowels matted together by adhesions from a very large gangrenous appendix, reaching down in the pelvis. These adhesions were loosened and the appendix removed. As the bowels were adherent to the old hernial sac, I removed this and closed the hernial opening through another incision. A drain was put in the wound leading to the appendiceal stump and the rest of the wound was closed. The patient stood the operation, which only lasted forty minutes, quite well. He was put to bed, and I expected his bowels would soon move. The next day, however, all effort to move his bowels had proven ineffectual and the distention increased.

It was evident to all that the patient could not last long. Then it was that I decided to put into effect the following operation: He was removed to the operating room, etherized, the abdominal wound reopened, and the over-distended colon pushed out. This was grasped

with two forceps about one-half inch apart, and gauze packed snugly around the gut in the opening. A purse-string suture was inserted around the forceps, just as in gall-bladder operation. The gut was then opened between the forceps and a rubber tube inserted well up in the ascending colon, at which time the suture was tightened and fastened to the tube. Then another suture was inserted about one-half inch from first, and, when the tube was shoved in, the gut was inverted and the suture tightened.

When the tube was inserted, a great amount of gas escaped and the distention was relieved very much. The abdominal toilet was completed and patient put to bed. Whenever hot normal salt solution was used through the tube to irrigate the bowel, this not only removed a great deal of fecal matter, but stimulated peristalsis and caused a great amount of gas to escape. The patient was so much relieved that his vomiting ceased and his symptoms improved rapidly.

After four or five days we succeeded in getting his bowels to move per rectum, and in a short time the tube was removed from the colon, or rather it came away of its own accord.

I attempted to close the fistula by Lembert suture, but there was so much local infection around it that the stitches sloughed out. For some weeks he passed some of the bowel contents through the fistula. The muscles, fascia, and skin immediately around the incision sloughed, but after four weeks this filled up with granulation tissue, and the fistula closed also. This old man, who is now well and healthy, undoubtedly owes his life to the direct drainage of his bowels.

I have used this procedure on several other patients and they are now completely recovered. Of course, the use of Fowler-Murphy drop-salt solution and drainage position must be carried out just as in any drainage case.

If I have impressed sufficiently upon your minds this simple life-saving procedure, I shall feel fully rewarded for my efforts in bringing it before you.

Analyses, Selections, Etc.

Comparisons of the Effervescing Baths.

In the renaissance of physiologic therapeutics a conspicuous part is played by the gaseous

baths prepared by means of reacting chemicals which evolve, on the one hand, carbon dioxide, and on the other, oxygen. The theory that these procedures have merely a psychic or suggestive effect has been exploded since the advent of the sphygmomanometer has made possible exact determinations of their action on the circulatory apparatus.

It has not been possible to exactly reproduce, artificially, the natural carbonated bath. In the German spas the largest portion of the CO_2 is chemically combined with water, while in the carbonated baths prepared by means of bicarbonate of soda and acids there is a great excess of uncombined CO_2 which is readily given off and inhaled by the bather with occasional untoward results.

The oxygen bath is prepared by means of perborate of soda, a white powder which contains one loosely combined atom of oxygen, so that it forms with water a solution of H_2O_2 . A rapid decomposition of the H_2O_2 , with a vigorous effervescence, is attained by adding a manganese salt as a "catalyzer" to the bath water. The materials are supplied in cans and afford a convenient means of employing balneologic treatment at home.

The effects of the two baths differ. In the CO_2 bath the skin becomes reddened because of the dilatation of the surface vessels, while in the oxygen bath the skin of the bather is bleached, owing to the contraction of the cutaneous vessels. Winternitz, reporting comparative investigations of the various baths, states that at 95°F . the oxygen bath reduces both pulse-rate and blood-pressure in a marked degree, augmenting the rhythmic contractions of the capillaries and dilating the vessels in the muscles.

Wolff found that a pathologically altered blood-pressure is raised by CO_2 baths of indifferent temperature to an even greater extent than it is lowered by oxygen baths of the same temperature.

Scholz agrees in all essentials with the investigations in Mueller's clinic and Laqueur's service, as to the effects of gaseous baths on the circulation when all sources of error are excluded. With healthy subjects the reduction of the blood-pressure which occurs in the oxygen bath disappears almost at once, and the pulse behaves correspondingly. In organic heart affections, with no great loss of compensation, the blood-pressure falls regularly and often re-

mains lowered for two hours after an oxygen bath, and the rapid, feeble and irregular pulse improves.

Arteriosclerosis with hypertension is greatly benefited, especially in beginning stages. Here, the oxygen bath exerts a mild gymnastic effect on the muscle walls which opposes the progress of the disease and also relieves the heart. We find on investigating the reports, that these effects are often lasting. Affections of the cardiac muscle—chronic myocarditis, fatty heart—constitute the therapeutic field of the carbonated bath. In nephritis, the oxygen bath lowers blood-pressure and makes the tense pulse softer and slower. Cardiac neurosis and tachycardia yield to oxygen baths. In neurasthenic insomnia their sedative and sleep-promoting effects make them particularly useful. The CO_2 baths exercise the heart, while the O baths rest it; the former raise blood-pressure and strengthen the central activity, while the latter reduce blood-pressure and stimulate the peripheral vessels. By a preliminary course of oxygen baths a patient may be prepared for the tax which the CO_2 bath makes upon the heart.

Munk found that oxygen baths raise the muscular tone and reduce the subjective sensation of warmth, so that patients can be given baths at much higher temperatures than they could in plain water. He, therefore, recommends the oxygen bath in relaxed paralysis, certain forms of tabes, in nervous affections with increased excitability, and Graves' disease. The CO_2 bath is a stimulating procedure, while the oxygen bath is a sedative one.

Kellogg thinks that the oxygen bath accomplishes everything that the carbon dioxide can, but that the former encourages skin respiration, while the latter suspends it; moreover, the inhalation of the carbonic acid fumes is detrimental, while that of oxygen is beneficial.

Michaelis also points out that progressive therapists are more and more in favor of the oxygen bath because it induces peripheral stimulation, gives the benefit of oxygen inhalation and has favorable sedative effects.

Doubtless we possess in the gaseous baths a means of avoiding recourse to drugs; and in the form in which they are marketed for home use they present a valuable addition to the physician's armamentarium, obviating the need of prescribing expensive trips to the foreign watering places.—(Editorial, *Physiologic Therapeutics*, March, 1911.)

Another Word as to Spinal Anesthesia.

Blumfeld, the senior anesthetist at St. George's Hospital, says the mortality which would develop from the routine use of spinal analgesia would be very much greater than that which now occurs under the use of the ordinary and more old-fashioned anesthetics, and he quotes Bier as having stated recently that a fatality of from one to four in five hundred cases is to be looked for. Furthermore, there can be no doubt, as regards certainty in producing anesthesia, that the spinal method at present leaves a good deal to be desired, failure to relieve pain occurring in from 2 to 7 per cent. of cases. It is possible that some of these failures are due to faulty technique, or possibly to the drug being inert or not sufficiently fresh. In cases in which surgical shock is very much dreaded from operations on a lower extremity, spinal anesthesia might be used to block the impulses in addition to the employment of a general anesthetic, and under these circumstances very little of the general anesthetic would be required.

In continuing the discussion of this subject, McCardie, whose statistics upon the subject of anesthesia we have had occasion to quote a number of times in previous years, stated that he had collected fifty cases of deaths ascribed to spinal analgesia, and that thirty-five at least of these occurred under the use of stovaine. Further investigation on his part showed that out of 1,686,348 cases receiving inhalation anesthesia, recorded in Europe, 518, or one in 3,255, died from the anesthetic, cases receiving nitrous oxide not being included in the list. On the other hand, he collected 23,995 cases of spinal analgesia with 29 deaths, or one in 826. This percentage is much higher than the percentage reached by Strauss, who collected 22,717 cases with 46 deaths, but concluded that all could not be fairly attributed to the method. More recently, Strauss has reported that he has collected 30,000 cases with a death-rate of one in 1,800, and has stated that with tropacocaine there was one death in 1,411 cases, 7,059 patients having been subjected to its use.

Hochmeier asserts that spinal analgesia should only be resorted to when ether and local analgesia will not suffice. McCardie's own experience with spinal analgesia has certainly not been encouraging, for he states that out of 21 cases there were 12 failures, three of col-

lapse and two deaths. These two deaths occurred in patients in whom the effects of inhalation anesthesia were feared; but in two of the patients who suffered from collapse chloroform was subsequently taken with success. One of the deaths and two of the cases of collapse occurred when Jonnesco's method was employed. McCardie also believes that the psychic shock in spinal analgesia is a very material factor and is disadvantageous, particularly in nervous and timid patients. He points out that many of the surgeons who resort to this spinal method also use hypodermic injections of scopolamine and morphine to make it more efficient, particularly if the patient is excitable.

Concerning the frequency of pulmonary troubles after operations performed under various types of anesthesia, it is interesting to note that McCardie states that the percentage after inhalation anesthesia has been estimated to be two, but other estimates give as low as 0.32 per cent. Kummel states that with the scopolamine-morphine anesthesia that is, its hypodermic use—the pneumonia rate fell very materially, and equally favorable results seem to have been obtained by a number of other German clinicians. But, as McCardie says, our recent methods in inhalation anesthesia rarely produce lung trouble.

One serious disadvantage in the employment of spinal analgesia is very severe headache, which may last for several days or longer, whereas, this symptom is rarely experienced after inhalation anesthesia. It is found in one-third to one-half of the cases after spinal injections. Cases have been reported in which headaches continued for two weeks, and Deetz reports a case in which it lasted for at least six weeks, while Hochmeier mentions a case in which headache lasted for six months. Furthermore, prolonged pain in the back occurs in about 30 per cent. of cases, and this pain may extend to the limbs.

Concerning the question of dangerous dose, it is stated that Hardouin, in 15 fatal cases under stovain, found that in none of them was the dose over 0.7 grain. In other words, the standard dose proved fatal.

Finally, in connection with the subject of treating accidents under spinal analgesia, McCardie points out that whether the patient is set up or whether he be inverted, his condition may not be improved and may be made worse,

for in the one case he may die of syncope and in the other of poisoning.—(Editorial, *Therapeutic Gazette*, March, 1911.)

Therapeutic Value of Aguamiel.

Charles S. Dolley, Mexico City, speaking of the sap of the maguey, a plant indigenous to Mexico, now being introduced for industrial and ornamental purposes in other countries, says that it is a saccharine, slightly acid liquid, colorless and limpid, and either transparent or translucent and opaline, according to the amount of gum present in the form of an emulsion. Analysis of the sap, aguamiel, shows it to contain the sulphate, phosphate and agavate of calcium; agavate, carbonate and chloride of sodium; chloride of magnesium, sesquioxide of iron, alumina and silicic acid. These salts, associated as they are with phosphoric acid, are of alterative and nutritive value, and the fact that aguamiel and pulque (also made from the maguey) are particularly beneficial for nursing mothers, in cases of rachitis, chlorosis, anemia, and in neurasthenic states generally, is apparent.

Enough has been said to indicate the fact that in aguamiel is to be found a natural vegetable compound possessing valuable nutrient, tonic, antichlorotic and antirachitic properties; a gentle laxative, a mild diuretic with peculiar, almost specific, action in inflammatory and catarrhal conditions of the kidneys and bladder; an efficient emmenagogue and a valuable galactagogue. It is, however, not widely known that it has been in general use for these qualities for hundreds of years by Mexican physicians and by the people throughout the regions where it is produced. Numerous contributions have been made to medical literature on the curative value of the fresh and fermented sap (pulque) of the maguey. It is most generally recognized and widely used in diseases of malnutrition, and especially where this has led to diseases of the kidneys and bladder. In congested and inflamed states of these organs, in renal inadequacy due to an atonic condition of the epithelial cells of the kidney, in the early stages of the various affections of the kidney associated with albumin in the urine, and collectively referred to as Bright's disease, it has been found to be an almost unfailing remedy. The use of aguamiel in these cases is becoming widely known to American physicians, and they send their patients to Mexico in increasing

numbers each year to take the aguamiel cure, with the most gratifying results.

Numerous efforts have been made to preserve aguamiel and pulque as pharmaceutical preparations in order that the benefits to be derived from their medicinal use might be extended throughout the world; but until recently these attempts have been unsuccessful. Fortunately, however, within the last year a method has been discovered whereby fresh aguamiel may be concentrated without alteration of any kind except in respect to density, and the finest Apam aguamiel is now being prepared for medicinal use by the very latest methods of pharmaceutical science.—(*Idem.*)

Book Notices.

Differential Diagnosis. Presented through an Analysis of 383 Cases. BY RICHARD C. CABOT, M. D., Assistant Professor of Clinical Medicine, Harvard Medical School. Illustrated. W. B. Saunders Co., Philadelphia and London, 1911. 8vo. 753 pages. Cloth, \$5.50 net.

The author states that the plan he has followed is to present a list of the common causes of the symptoms most complained of by the patients; to classify these causes in the order of their frequency as far as possible, and to illustrate them by case histories in which the presenting symptom is followed home until a diagnostic problem and its solution are presented. This plan has the advantage of projecting before the reader the case as he would study it in his office. It is by far a more practical method than that followed by text-books, for, as is well said, cases do not often come to us systematically arranged.

The book must be read if one would realize its value to that class for which it is written—namely, the general practitioner; but the Table of Contents gives an idea of its scope. One chapter deals with general considerations on pain; separate chapters are devoted to pain in defined regions; headache, general abdominal, epigastric pain, etc., while other separate chapters deal with fevers, chills, coma, convulsions, weakness, cough, vomiting, hematuria, dyspnea, jaundice and nervousness.

Even omitting cases of diarrhea, constipation, pallor, etc., as it does, one must acknowledge that many of the books of his library could well be displaced in favor of Cabot's *Differential Diagnosis*, and that they would not be missed.

Editorial.

Our Editorial Staff.

In announcing the Editorial Staff referred to in our last issue, it may be interesting to tell something of the progress made by this Journal since its foundation.

To meet a want of the profession of the State, upon the discontinuance of the *Virginia Clinical Record*, the *Virginia Medical Monthly* was established by Dr. Landon B. Edwards, in April, 1874. It gradually attracted to its pages men eminent in the profession throughout the country, many of whom have left enduring records of great discoveries and advances. Valuable contributions by such illustrious authors as Sims, Sayre, Joseph Jones, Battey, Toner, Cutter, Reuling, Jas. L. Cabell, Levin S. Joynes, Wm. C. Dabney, Robt. T. Coleman, Bedford Brown, John Herbert Claiborne, Hunter McGuire, John S. Wellford, and a host of others—not to mention living authors—have brought to its support subscriptions from all parts of the country, and established its position among representative medical journals of the South.

In response to a demand of the times for publication oftener than once a month, it was changed to the *Virginia Medical Semi-Monthly* in 1896, since which time the generous patronage accorded it has demonstrated the wisdom of the change. It might also be noted as a matter especially encouraging that even in the past few months, when changes in both departments were to be anticipated, there has been a marked increase in subscriptions—the additions coming from several States—without the loss of a single advertisement.

A review of the volume just closed gives some idea of the high character of articles published, and of the wide area over which the influence of this Journal extends. This volume contains original communications from twenty-one States, more than one-half, however, having been contributed by Virginia writers.

With the rapid advance in medical science in recent years, and its consequent expansion into many special departments, it is apparent that no editor could unaided discharge fully the responsibilities devolving upon him.

In the light of these conditions, it will be

gratifying, we are sure, to friends of the Journal to know that we have enlisted the active cooperation of an Editorial Staff of the following representative physicians:

From Virginia—

Dr. John Staige Davis, Professor of Practice of Medicine and Pediatrics, University of Virginia.

Dr. Wm. F. Drewry, Superintendent Central State Hospital, and Ex-President Medical Society of Virginia.

Dr. Stephen Harnsberger, Ex-President Medical Society of Northern Virginia, Councilor Medical Society of Virginia, and of Tri-State Medical Association of the Carolinas and Virginia.

Dr. J. Shelton Horsley, Professor of Principles of Surgery and Clinical Surgery, Medical College of Virginia.

Dr. Harry T. Marshall, Professor of Pathology, University of Virginia, and Councilor Tri-State Medical Association of the Carolinas and Virginia.

Dr. Rawley W. Martin, President State Board of Health, and of Medical Examining Board, and Ex-President Medical Society of Virginia.

Dr. Stuart McGuire, President, and Professor of Clinical Surgery, University College of Medicine, and ex-President Medical Society of Virginia.

Dr. Herbert Old, Member Medical Examining Board of Virginia, and ex-President Norfolk County Medical Society.

Dr. M. M. Pearson, ex-President Southwest Virginia Medical Society, and ex-Councilor Medical Society of Virginia.

Dr. Stephen H. Watts, Professor of Surgery and Gynecology, University of Virginia.

Dr. Richard H. Whitehead, Dean of Medical Faculty, and Professor of Anatomy, University of Virginia.

From out of the State—

Dr. Henry T. Bahnson, of Winston-Salem, Ex-President Medical Society of North Carolina Board of Health, and Medical Examining Board, State Honorary Member Medical Society of Virginia, and Councilor Tri-State Medical Association of Carolinas and Virginia;

Dr. Llewellyn Eliot, of Washington, D. C., Councilor Medical Association District of Columbia, Secretary Medical and Surgical Society of District of Columbia, and for many years

Professor of Clinical Medicine, Georgetown University.

These editors will from time to time contribute scientific editorials and discuss general subjects of professional interest. They will not be responsible for questions of policy, though it is our purpose as far as is practicable with a scattered Staff to consult them as occasion suggests. As we wish to have the *Semi-Monthly* in every way representative, the utmost freedom will be accorded them, although occasionally some member of the Staff may desire, or it may seem advisable, to sign an editorial. Each editor will be expected to care for any reference to his work.

In addition to the contributions from the regular Staff, we will also publish many signed editorials by others especially qualified in their several departments.

Dr. Mark W. Peyser, Secretary of the Richmond Academy of Medicine and Surgery for seventeen years, has been with us for the past six months, and will continue in editorial charge of the Department of Analyses, Selections, etc.

For the general medical matter run in our columns, as well as for the advertisements and other business affairs, our Staff will have no responsibility whatever. The Managing Editor will continue to have exclusive charge of these departments and will endeavor to maintain the high standards fixed by the founder of the Journal.

The Increase of Cancer.

Since mortality statistics are becoming more reliable and as more territory is being embraced in the registration areas, we can compare the prevalence of diseases as they exist now with their frequency several decades ago. According to recent health records, cancer is markedly on the increase. A few years ago the apparently increasing death rate from cancer was attributed to the fact, that the diagnosis during the last ten or fifteen years was more accurate than it had been forty or fifty years ago. This excuse will no longer hold, as recent deaths from cancer in the registration area of the United States alone have increased from 53 deaths per 100,000 population in 1890, to 70.8 per 100,000 in 1906, and this includes a period during which the diagnosis of cancer has been practically the same. The cancer death rate in the registra-

tion area of the United States from 1901 to 1906 increased more than 5 per cent. During this period of only five years, there were 128,442 deaths, distributed as follows:—Cancer of the mouth 4,326; cancer of the stomach and liver 51,398; cancer of the intestines 14,934; cancer of the female organs 20,404; cancer of the breast 4,683; cancer of other organs not mentioned 32,697. It is estimated that there are now 80,000 cases of cancer in the United States, and that 40,000 deaths occur annually from this cause in the United States alone.

There can be no material reduction in mortality from cancer until the public is educated to the importance of an early diagnosis and until the profession can appreciate that prompt excision of a malignant tumor, is the surest cure. While it has been said that cancer has no symptom, which in itself is pathognomonic, there is a negative symptom which is of great significance, the absence of pain. Practically all cancers are free from pain in their early stages. When cancer is caused by irritation or inflammation, pain may accompany the inflammation or irritation, but the pain is usually less severe after cancer develops than before. In cancer of the stomach, which the Mayos and others have demonstrated originates in the majority of cases from gastric ulcer, the acute pain from the ulcer is modified and is less severe than it was before cancer developed. "Stomach trouble" which can not be cured by medicine within a few months almost always demands an operation for its cure, as it usually is due to ulcer of the stomach or duodenum, or to gall-stones, or to appendicitis. The reduction in the mortality of tuberculosis was accomplished only by the education of the public through the medical profession. A similar decrease should be obtained by education as to the prevention of cancer by curing conditions that produce chronic irritation and ulcers before cancer sets in, and by prompt excision of cancer in its early stages. Such methods should reduce the 40,000 deaths from cancer that occur annually in the United States to probably less than 10,000.

We have been informed that it is the purpose of the Health Commissioner of Virginia, Dr. E. G. Williams, to issue in the near future a bulletin on cancer. This work will be most timely, and should receive the attention

and the support of the medical profession. A bulletin on this subject was published by the State of Michigan in 1909, and other States have such bulletins in contemplation, though the health department of Virginia will be a pioneer in this excellent work.

Medical Society of Virginia.

At a recent meeting of the Richmond Academy of Medicine and Surgery, the following were appointed as the Local Committee of Arrangements for the forty-second annual session of the Society to convene in Richmond, October 24-27, 1911, under the presidency of Dr. O. C. Wright of Jarratt:—Drs. J. Fulmer Bright, Jos. A. White, Edward McGuire, Alex. Brown, Chas. M. Edwards, J. Shelton Horsley, Clifton M. Miller, Chas. R. Robins, Ennion G. Williams, and A. Murat Willis.

The officers of the Society are working hard, and there is no reason why the coming session should not be one of the most interesting and pleasant ever held. Let each member try to secure at least one new applicant for membership at the next meeting. It is not too soon to start to work at once, and especially in view of the large number of young M. D.'s who will shortly join our ranks as a result of the College Commencements.

As inquiries are constantly being made as to when the Transactions of the 1910 session may be expected, it may be opportune to state that much of the matter for them has been in the printers' hands for sometime, and the Secretary, Dr. Paulus A. Irving of Farmville, hopes to be able to issue them in about six weeks. The delay in their publication, as all members will appreciate, has been unavoidable.

Medical Corps, Virginia Volunteers.

Lieutenant-Colonel Junius F. Lynch, Surgeon General of Virginia, will, from time to time, send us items of interest in regard to the Medical Corps, Virginia Volunteers. The officers composing the Medical Corps are representative men in the profession and are enthusiastic and hard-working. With one exception, every regiment and separate battalion has now its full quota of hospital men and each detachment is thoroughly equipped and well instructed.

Captain Israel Brown, Medical Corps, Virginia Volunteers, has been promoted to Major, vice Major William L. Old, retired, and assigned to the 4th Regiment Infantry.

Dr. Herbert R. Drewry has been commissioned a Captain in the Medical Corps and assigned to the 4th Regiment Infantry.

Captain Giles B. Cook has been detailed to inspect medical officers and the hospital corps detachments in Richmond, Norfolk, Portsmouth, Chase City, Danville and Roanoke. He is accompanied by Major F. P. Reynolds, Medical Corps, U. S. A.

The following officers of the Medical Corps have volunteered to attend the maneuvers in Texas:

Lieutenant-Colonel Junius F. Lynch, Major A. T. Finch, Major Israel Brown, Major Truman A. Parker, Captain J. C. Bodow, Captain J. F. Bright, Captain F. K. T. Warrick, Captain Giles B. Cook, Captain H. R. Drewry, Captain J. M. Robinson, Captain Harry Wall.

Capt. J. Fulmer Bright, Medical Corps, has been detailed to attend the maneuvers in Texas, and is ordered to report to the Commanding General between the 3d and 6th of April. Other medical officers will be detailed for this tour of duty later on.

The Virginia Health Department

In a recent bulletin treats in detail of the care of the teeth and emphasizes the need of good teeth for good digestion and general good health. As an aid in this direction, it asks the co-operation of school authorities in instituting rigid dental inspection among the children.

In its fight for the prevention of typhoid fever, the Department will shortly issue literature giving directions for having sanitary wells and springs, and sanitary privies, and will begin the inspection of summer hotels. Believing that outbreaks of typhoid fever in smaller towns are frequently due to an inadequate sewage disposal, the Department will also seek to secure the installation of better systems for this purpose in these towns. In the rural districts, it is believed much good has already been accomplished by the representative who accompanies the Farmers' Institute Train, and talks to the farmers on health subjects.

From the investigation of clinical histories of cases of pellagra received at headquarters, in response to a recent appeal to physicians to report all such cases in their practice, it is hoped some important discoveries may be made in regard to the disease.

The American Society for the Study of Alcohol and Other Narcotics

Will hold its fortieth anniversary meeting at the Hotel Belvedere, Baltimore, Md., April 19-20, 1911. This was the first medical society in the world to take up the study of alcohol

and drug narcosis as a scientific matter, and seek by clinical experience and laboratory research to determine the laws and conditions which underlie the great alcoholic questions of the day. Historic addresses and several very interesting papers on research work, and new studies of the problem, will be read. Physicians and all persons interested are very cordially invited to be present.

For circulars and other information address T. D. Crothers, M. D., Secretary, Hartford, Conn.

The American Medical Editors' Association

Will have their 42nd annual meeting at the Alexandria Hotel, Los Angeles, California, June 26-27, under the presidency of Dr. J. MacDonald, Jr., of New York. A most interesting session from a literary as well as a social point of view is assured those fortunate enough to be able to attend. Dr. J. J. Taylor, Philadelphia, Pa., is secretary.

Two parties are now being organized to make the trip from the eastern part of the United States. The one overland is under the supervision of Dr. C. L. Stevens, of Athens, Pa., while the other by the Southern Pacific steamer to New Orleans and then by rail to Los Angeles, is in charge of Dr. MacDonald.

The Norfolk (Va.) Health Department

Has again taken up its fight for the extermination of the fly and mosquito. The success with which they meet, however, will in great measure depend upon the support they receive from the general public. We trust the Department will be rewarded for their labor.

Dr. Alfred P. Upshur,

Son of Dr. John N. Upshur, of this city, and a graduate of the Virginia Military Institute and of the University College of Medicine, 1908, has successfully passed the examinations for appointment to the Medical Reserve Corps of the Army.

Dr. J. J. Kindred Honored.

Dr. J. Joseph Kindred, President of River Crest Sanitarium, Astoria, N. Y., was recently elected on the regular Democratic ticket, to represent the 14th Congressional District of New York in the 62nd United States Congress. We congratulate the doctor and the medical profession of New York on this great honor paid one of their number.

Dr. Kindred is a Virginian by birth, hav-

ing been a native of Southampton County, where he made his home until about twenty years ago, when he left to try his fortunes in the metropolis. We wish the doctor success in politics commensurate with his attainments in the medical world.

For Sale.--\$3,500 cash practice in a railroad town. Dwelling with 11 rooms, and all necessary outbuildings, and four acres of land. Address, "W," care *Virginia Medical Semi-Monthly*.

Obituary Record.

Dr. William Warren Potter,

Editor of the *Buffalo Medical Journal* since July 1888, died at his home, Buffalo, N. Y., March 14. He was born in Strykersville, N. Y., December 31, 1838, and studied medicine at the Buffalo University Medical College, from which he graduated in 1859, after which he immediately entered upon the practice of his profession. He joined the Federal Army in 1861, and saw active service throughout the Civil War, being mustered out with the rank of lieutenant-colonel of volunteers. He was a member of, and prominent in many local and national medical societies, in all of which he was deservedly popular.

Dr. Adolph G. Hoen,

Of Richmond, Va., died in Baltimore, Md., March 29, after an illness of several months, at the age of 61. He graduated in medicine from the University of Maryland in 1872, and from his interest and work in microscopic histology, became known as a pioneer in that branch of medicine. For many years Dr. Hoen lived in Baltimore, and was for a while connected with the Johns Hopkins Medical School. He was also associated with Dr. Paul Gibier in conducting the Pasteur Institute in New York, prior to the time of his becoming director of the Pasteur Institute of the University College of Medicine, Richmond. He was a member of the faculty of the last named school, as also of several medical societies, including the Richmond Academy of Medicine and Surgery and the Medical Society of Virginia, in all of which his loss will be keenly felt. His widow and several children survive him.

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Original Communications.

A PRELIMINARY REPORT OF NINE CASES OF PULMONARY TUBERCULOSIS TREATED BY COMPRESSION OF THE LUNG.*

By MARY E. LAPHAM, M. D., Highlands, N. C.
Superintendent Highlands Camp Sanatorium.

Recovery in pulmonary tuberculosis is getting to be such an every day occurrence, that we think nothing of it. We almost expect it as a matter of course; and after we have supplied the patient with a porch and quiet and fresh eggs, we think that recovery must follow as inevitably as the night the day. But this is not always true.

A certain number of cases will not recover no matter how favorable the conditions are, or how skilful the treatment; no matter how good the nursing, or careful the feeding, or fine the climate, a certain percentage of cases go steadily on from bad to worse. Even in Davos—where the best results in the world are obtained—all cases do not recover, and even under the great Turban—under the most skilful specialist of to-day—all cases do not get well.

Suppose one of these cases belongs to you? Suppose that recovery in this particular case is of vital import to you? As month after month goes by and the process extends further and further into the lung, and the hectic flush deepens, and the fever is higher, and the cough pulls you to pieces by its violence; as the eyes of the patient beg you day after day for help, what are you going to do? The end seems inevitable. Symptomatic and tuberculin treatments have failed. Is there anything else that can be done? Must we stand helplessly by? Oh for the power of a surgeon to step in, and

with a swift determined boldness change defeat to victory, and snatch the patient back from the very brink of the grave.

In Europe cases of pulmonary tuberculosis, which do not recover under symptomatic and tuberculin treatment, are being cured by injecting nitrogen into the pleural cavity until sufficient pressure is obtained to compress the lung. The effect of the nitrogen is purely mechanical and due entirely to pressure. It is practically an elastic compress evenly applied to all the surface of the lung, crowding it up closer and closer together, reducing it to the smallest possible bulk; forcing all the purulent, caseating, liquefying materials out through the bronchial tubes; making the expansion of the lung impossible; preventing the entrance of blood and air, thus making the lung unfit for tubercular activities; and converting the tubercular lesions into cicatricial tissue by favoring an enormous overgrowth of connective tissue. A lung that has been compressed for a sufficient length of time is clean, dry and firm. All foul material has been forced out, all tubercular processes have been obliterated, and scars are the only evidence of their former existence.

As the lung becomes unfavorable to the growth of tubercle bacilli, the amount of sputum decreases and the bacilli gradually disappear, and the general condition of the patient improves.

There have been many autopsies made of lungs that have been compressed until complete recovery was obtained, the death of the patient being due to other causes. Thorough laboratory studies and experiments have corroborated the findings of the autopsies, so that it has been proven, beyond question, that a successful compression of a tubercular lung accomplishes threefold results.

First.—All tubercular processes are obliterated, they are absolutely crushed out.

* Read before the Tri-State Medical Association of the Carolinas and Virginia at Raleigh, N. C., February 23-25, 1911.

Second.—All tubercular lesions are converted into durable scar tissue.

Third.—The alveoli show no tendency to adhere, but readily unfold and resume their functions after the pressure is removed.

Since the first of May, 1910, I have treated ten cases of pulmonary tuberculosis by this method, the indications for its use being the inability of the patient to make a good recovery under symptomatic and tuberculin treatment. Sufficient time has not elapsed to warrant any conclusions being drawn from the results, which are still uncertain. Nevertheless, four of the cases show such a marked improvement that I feel justified in calling your attention to them, hoping to arouse your interest in the method, because it promises such valuable aid in the future.

Case I. July 2nd, 1909. School girl, seventeen, left lung involved to fifth rib in front and eighth behind, and full of large resonant rales; in the sputum T. B. and patches of alveolar cells. The patient had never been strong since menstruation at fourteen. May, 1908, menstruation ceased. The child coughed badly all summer. In December, after violent paroxysmal coughing, with vomiting and loss of meals, menstruation reappeared. January 15th and 16th, 1909, March 3rd, June 4th, five hemorrhages. After July 2nd she gained twenty pounds in weight, and the lung cleared up so that there were no rales below the spine of the scapula. In January, 1910, menstruation failed and the violent cough returned, followed by vomiting and rales over all the old area. This subsided gradually. In March a similar attack. In April menstruation reappeared, together with hemorrhage and severe aspiration pneumonia. These attacks, occurring always in the middle of the month and associated with menstrual disturbances, were very suggestive of Turban's vicious menstruation.

Fonsagrives says that the circulation in the lung and uterus is comparable to that of an hour-glass. Pelvic influences may cause the blood to back up into the lung, and even into the throat, so that the voice becomes hoarse and rasping. The congestion of the lung causes a pneumonic extension of the tubercular process, and the intervals between menstruation are the only time the lung has to recover.

In some cases tubercular activities upset menstruation, and menstruation causes an extension of the tubercular processes. When once this vicious circle is established, there is very little hope of recovery. Believing this to be a case of vicious menstruation, on April 24th, 1909, the lung was compressed in the Mercy Hospital, Chicago, by Dr. Murphy's assistant, Dr. Golden, by injecting nitrogen into the pleural cavity. The sputum had previously been swarming with tubercle bacilli. In six weeks they were gone and there were no more alveolar cells. The patient is now at home and is doing well.

Case II. Lawyer, thirty-five, upper and middle lobes of right lung involved. For a year symptomatic and tuberculin treatment were faithfully tried. The altered breath sounds and rales would completely disappear, only to return in full force whenever any physical effort was made. There was no money and a family to support. In August, 1910, we compressed the lung. In a month there were no tubercle bacilli in the sputum. The patient went home and has supported his family ever since.

Case III. Mrs. P., twenty-five, emaciated and unable to eat. A history of three year's tuberculosis of the left lung, which was completely involved and riddled with destructive foci. The profound cachexia, the failure of three year's symptomatic treatment, indicated compression of the lung as the only hope of recovery. This was done in September. In two months the patient was driving, picnicking, eating and sleeping well, and her state of melancholia had changed to a bright and active interest. She is now at her home, going about the city, superintending her housekeeping and gaining rapidly in every way.

Case IV. Mrs. A., forty-four. In bed in a tent for a year before coming to me with fever and hemorrhages. In the apex of right lung, altered breath sounds and rales. Left lung completely involved. In the second interspace, two inches from the sternum, an area which expanded with inspiration and fell with expiration. Over this area bronchial breathing and dropping rales. It seemed dangerous to attempt compression of the lung for fear of bursting the walls of this cavity, but after four months of symptomatic and tuberculin treat-

ment without avail, and as the hemorrhages persisted, we cautiously began the effort November 15, 1910. January 15, 1911, there were no T. B. in the sputum. Breath sounds were extinguished and the cavity was obliterated. She is steadily gaining in strength, and after eighteen months in bed with temperature and hemorrhages, she is now walking about and doing light housework with no temperature and no hemorrhages.

Case V. An actor, twenty-six. Diffuse peribronchial infiltration of left lung, with persistent attacks of pleurisy. For six months the temperature would keep down if the patient stayed in bed, but getting up was invariably followed by temperature. Tuberculin and symptomatic treatment did not suffice. The lung was compressed the first of November, 1910. January 1911, he went home, walking freely about the city and acting several times. There has been no temperature and the patient is doing well.

Case VI. Miss S., twenty-four. Left lung completely involved. Symptomatic and tuberculin treatment unsuccessful. After two years patient had a daily temperature of 38-39. In November, 1910, we began compressing the lung. Excepting at the menstrual period there has been no more temperature. The patient is walking freely and doing pretty much as she pleases. She is not well because of casts and albumen in the urine.

Case VII. Actress, twenty-four. Upper lobe of left lung, upper and middle lobe of right lung. Temperature 38. Violent cough, profuse expectoration, night-sweats. In the second interspace of the right lung, loud bronchial breathing and dripping rales. After four months of symptomatic and tuberculin treatment, on the first of November 1910, the right lung was compressed. After four weeks the temperature has not been above normal, excepting at the menstrual period. The cavity is obliterated, and the patient is up and about the Camp. We hope that the lung will heal and we can eventually remove the pressure, and if necessary, compress the left lung. The result is very uncertain, but there is no temperature, the patient is stronger and does not have to stay in bed, the appetite is markedly better and the breath sounds in the compressed lung have almost entirely disappeared.

Case VIII. Mrs. H., twenty-three. Pro-

foundly cachectic. Right lung completely involved and dripping wet, with pleural effusion to angle of scapula. No cough, no expectoration, no temperature. This being an interstitial case, with no trans-bronchial drainage, we hesitated to compress the lung. After six months symptomatic and tuberculin treatment, with no improvement, we compressed the lung. The patient did not improve. Each injection was followed by temperature, at times 40. Pleural reflexes have made the treatment difficult. After three months she has gained seven pounds in weight, goes in to dinner and walks about the Camp. With time, we hope for a complete recovery.

Case IX. Young man, twenty-six. History of a year's tuberculosis. Upper two-thirds of right lung dripping wet. Profuse diarrhea of long standing. Severe malaria. Temperature 38-38.5. No T. B. in feces. After four months of inability to dry out the lung by rest in bed, we compressed the lung although it seemed contraindicated on account of the diarrhea. We hoped to eliminate the lung condition and possibly find later on, that the diarrhea. We hoped to eliminate the lung day the patient has had chilling at eleven o'clock, followed by a temperature of 38-39, and rapid fall in temperature. Malarial organisms were formerly found in abundance, to-day only pigment granules and hyaline bodies appear. We have been unable to control the chills and temperature or the diarrhea. The lung is becoming compressed and the tubercle bacilli are disappearing from the sputum. The distress in the lung is gone and the coughing and amount of sputum are insignificant.

I fully realize that these results are too recent to be of any value. My only excuse is my desire to urge upon you the investigation of a method, which I believe offers a chance for recovery in cases of pulmonary tuberculosis that do not get well under symptomatic and tuberculin treatment.

The Rhode Island Medical Society

Hopes to celebrate its centennial anniversary in 1912, by the completion and occupancy of a Library Building, plans for which have been accepted. It will include an assembly hall, reading room, library, and other necessary conveniences, and will possibly become the permanent home of the Society.

X-RAY IN THE DIAGNOSIS OF URINARY CALCULI.*

By A. L. GRAY, M. D., Richmond, Va.

Roentgenologist to the Virginia Hospital and to St. Luke's Hospital, Richmond, Va.

While the value of X-ray examinations in cases of suspected urinary calculus is being generally appreciated, there are conditions which the presence of calculi often so strongly simulate that the writer will attempt to emphasize some of the most important, and at the same time point out some of the difficulties that confront the X-ray specialist in arriving at his diagnosis.

The roentgenologist is too frequently called upon only as a last resort, after all other means of ascertaining the trouble have been exhausted, whereas had the roentgen examination been made earlier the patient could have been saved much time, suffering and expense.

The condition most commonly confused with renal calculus is pyelitis due to other causes. It has been considered more or less essential by the general profession that attacks of "kidney colic" shall have been a part of the patient's previous history. This, however, is not at all necessary, for cases often present themselves with calculi of very large size, that have never caused colic of sufficient severity for the patient to recall it. The stone may or may not give rise to pain or tenderness, even its passage through the ureter may be painless, as has been conclusively demonstrated by Drs. Bevan and Potter, of Chicago.

A persistent pyelitis, especially if the urine contains blood, microscopic or otherwise, should call at once for a roentgen examination.

It is impossible by symptoms and clinical findings to determine whether a calculus, if present at all, is in the kidney or the ureter. It is not rare for the symptoms to point to a calculus on one side, when it is really present on the other.

Of eighty consecutive cases examined for calculus, reported by Dr. Eastmond, of Brooklyn, twenty-three were positive, and fifty-seven, negative. Fifty-eight of these cases presented typical symptoms, and of this number fourteen, or 24 per cent., were positive. Of the remaining twenty-two, with vague symptoms, calculi were found in nine, or 41 per cent.

Dr. Eastmond has compiled the following table:

URINE	Sand	Pus	Blood	Both	None	Total	Grand Total
Typical Symptoms with calculi	+ " 0 "	1 1	1 2	1 1	1 1	4 4	8
Vague Symptoms or symptoms referred to other points than site of Calculus.	+ " 0 "	2 5	1 1	2 0	0 4	5 10	15
Typical Symptoms 0 Calculi	+ " 0 "	3 5	6 4	4 8	5 9	18 26	44
Vague Symptoms 0 Calculi	+ " 0 "	0 1	3 1	0 2	6 0	9 4	13
		18	19	17	26		80

He further states that, from such a summary he is convinced that the presence or absence of urinary calculi cannot be determined from the history of the patient and the urinary findings.

It is by no means wise, in the writer's opinion, to disregard either the urinalysis, or other clinical findings, but care should be taken lest the roentgenologist allow these to exert an undue influence upon him in arriving at his diagnosis.

The other condition which is perhaps most apt to be confused with lithiasis is sub-acute appendicitis.

The writer has in the past twelve months discovered a number of calculi in the kidneys or ureters in patients who had previously undergone an operation for appendicitis, without experiencing the customary relief. In one of these cases a calculus was removed from the lower end of the left ureter, the patient having previously had an appendectomy performed, but following the operation the symptoms continued.

There are many problems that confront the X-ray specialist that necessitate the most careful technique, else he is liable to grave error, and will be confronted with the embarrassment of having the surgeon fail to verify his findings.

The objects giving rise to the greatest difficulty in making these examinations are phleboliths. These are found quite frequently in the veins of the pelvis, and if a single one happens to be along the course of the ureter it is exceedingly apt to be mistaken for a calculus. Fortunately, however, they are usually in such numbers and in such locations that they can be readily differentiated from stones. It must be borne in mind that calculi are as apt to occur

*Read before the forty-first annual meeting of the Medical Society of Virginia, at Norfolk, October 25-28, 1910.

when phleboliths are present as when they are absent, and it is not uncommon to find both.

In the presence of a doubtful shadow along the course of the ureter, it is especially desirable to have the ureter catheterized, and, with the stylet inserted, make a second radiograph, or better still, stereoscopic radiographs which will determine the relation of the concretion to the ureter.

Other shadows tending to confuse may be caused by scar tissue existing in a kidney where there have been localized areas of inflammation. Deposits of calcareous material may be present in the muscles or ligaments. These, though of rare occurrence, often strongly resemble calculi.

Another source of confusion is calcification of lymph-nodes within the abdomen. The presence of a mole has in several instances been known to give rise to an erroneous diagnosis. The writer has seen two instances in which a mole in the skin over the lumbar region has shown on the negative, but in both of these instances its presence was noticed and did not lead to error.

It is very important to inquire what drugs, if any, the patient has been taking previous to the X-ray examination; for Bland's pills, salol capsules, bismuth, iodine, and silver preparations will cast shadows quite similar to stones.

The customary dose of castor oil previous to an X-ray examination for calculi should never be neglected.

It is very necessary to protect carefully your plate, especially in warm weather lest a drop of sweat may be responsible for what appears to be a sharply defined and clear cut stone.

In examination for stone in the bladder, it is the custom of some operators to place the patient either in the sitting posture, or its equivalent in order to strike the true axis of the pelvis and thereby to avoid the overlapping of the bone shadows and that of the calculus if it is present.

It should be borne in mind that although the X-ray will demonstrate the presence of a concretion, provided it has enough density to enable it to cast a shadow, the inability of the rays to show the ureter itself renders it impossible to say absolutely that a concretion is not immediately without rather than within its lumen. Stereoscopic plates made with the stylet catheter in position will give the desired information with more certainty than any other method of procedure.

By the injection of a solution of collargol or of argyrol into the pelvis of the kidney through the ureteral catheter, the shape, size, and much concerning the conditions of the renal pelvis may be demonstrated from the radiograph. With the modern almost instantaneous methods of picture making so great is the accuracy with which a diagnosis of calculus can be made that in the hands of competent men errors will occur in less than 5 per cent. of the cases.[†]

312 East Franklin Street.

THE CLINICAL DIAGNOSIS OF EARLY TABES DORSALIS WITH NEGATIVE WASSERMANN REACTIONS—A CASE WHERE REACTION BECAME POSITIVE ONLY AFTER SALVARSAN—COMMENTS UPON SALVARSAN IN PRETABETIC STATES.

By TOM A. WILLIAMS, MB. CM. Edin., Washington, D. C.

Member Corresp. Soc. de Neurol. and Psychol. de Paris; Member Assoc. Soc. Clin. Med. Ment., Paris; Member American Psychopathological Association; Neurologist to Epiphany Free Dispensary, Etc.

SYPHILITIC GENESIS OF TABES DORSALIS.

No one who has followed the recent literature of salvarsan can fail to be struck by its relative failure to benefit cases of tabes dorsalis. Some pathologists argue from this that tabes dorsalis has other causes than syphilis. The argument appears the stronger from the fact that only from 50 to 70 per cent. of tabetics give positive serum reactions to Wassermann's test.

The fallacy of this reasoning is, however, shown by the fact that in some cases a negative reaction becomes positive during the evolution of the disease and, indeed, may do so during or after the exhibition of mercury, or as I shall presently show of salvarsan. But the inconvenience of this waiting for a positive sero-reaction is not necessary; for it is very rare that a tabetic does not present an increase and changed character of the cells in the cerebro-spinal fluid. So that a lumbar puncture will in practically all cases decide a diagnosis made doubtful by a negative sero-reaction.

NEED OF EARLY DIAGNOSIS.

But resort to this procedure is not always necessary to a clinician who has acquired proper neurological technique; and I do not speak of cases with Argyll-Robertson pupils and ataxia so well marked as to be noticed by even a layman. The diagnosis after the vesical functions are impaired, when the gait is ataxic, and after

[†]This article was fully illustrated by lantern slides

nutrition has suffered is too late to permit of therapeutic restoration to normal efficiency. The best possible result after this is arrest of the disease, leaving the patient locomotorially ataxic, vesically incompetent and nutritionally below par. To restore full health, the diagnosis must be affirmed in the preataxic stage, indeed in the pretabetic stage.—*i. e.*, before the posterior columns of the spinal cord have undergone secondary degeneration as a result of the implication of the spinal roots by low grade chronic luetic meningitis, which is the pathological prodrome of Deuchenne's disease.¹

THE CRITERIA.

This pathological process is clinically revealed by interference with the functions of the roots. When these are irritated paræsthesiæ or pains are produced. When they are impeded or destroyed, hypoæsthesiæ, atoniæ and diminution of the reflexes occur. When the anterior root functions are impeded, muscular pareses or atrophies occur. As in the case of all granulomata, the symptoms intermit at first; hence, the frequency with which the pains are first attributed to changes in the weather and are called rheumatism. Of course, the hypotonia and hypoæsthesiæ are rarely noticed unless the patient consults a skilled neurologist. Indeed, the visceral irritations and hypoæsthesiæ are frequently treated for months by internists without any suspicion of their neurogenic nature.

After a little, the pains and hypoæsthesiæ reveal a topography of radicular type—that is to say, they correspond to the distribution of one or more posterior spinal roots. This is the decisive character which permits one to affirm a pretabetic state.

Of course, one must exclude such radicular irritations and depressions as might be caused by vertebral luxations, localized tubercular pachymeningitis, tumors within the spinal canal, the more uncommon diseases of the spinal cord and especially the sclerosis caused by pernicious anæmiæ, which in some respects closely resemble *clinically* tabes dorsalis. Of course, the "ataxia" (dysergia) of cerebellar disease must be excluded by the usual tests.² The true ataxia of peripheral neuritis needs to be differentiated, too, but no clinician of experience is likely to commit this error. Much more likely (indeed, it is not uncommon), is the error of attributing to neuritis of rheumatic type the

early pains whose character should warn one of impending tabes.

AN ILLUSTRATION.

The following case³ should be a warning against a temptation to justify such a diagnosis in consequence of a negative Wassermann reaction persisting for some months, and the clearing up of bladder symptoms by local treatment.

The patient was a man of 34, referred by Dr. H. A. Fowler the middle of September, 1910, on account of burning, intermittent pains in the legs, and occasional twisting feelings and pains also in the chest. There was no history of syphilis, but he had dysentery ten years before and gonorrhea eight years before; history otherwise negative. Four years before, an enlargement of the prostate was cured by Dr. Fowler. Three years later, voiding became difficult.

EXAMINATION.

Reflexes.—Patellar L. minus, R. nil. Achilles nil. Plantar L. minus, R. very irritable. Cremaster and abdominal plus. Glutei L. diminished, R. nil. Bulbo-cavernosus minus. Radial and triceps L. plus. Erector-spinae low down, nil.

Motility.—Hypotonia of hamstrings. All movements were strong and free; but he says that when standing the muscles sometimes feel strained and crampy, and he wants to lean against the furniture. He has lost ten pounds in weight. No ataxia, though he says he sometimes sways. Diadokokinesis good, slight Romberg of right leg.

Sensibility.—A dull pain is almost constant; but every few days it becomes too acute to be borne. It is mainly in the internal surface of the left leg from the knee to the ankle running round the knee in front, thus corresponding to the distribution of the fourth lumbar root. It had begun as an ache eleven months ago after drinking some beer.

Sensibility was diminished to deep pressure in the calves; increased to pin pricks in the thighs. Left, over the second sacral distribution; right, over the fourth and fifth lumbar and first and second sacral areas. No impairment of touch, localizing, attitude or temperature senses.

No vertigo, deafness nor nausea.

Nystagmus was normally provoked on rotation; there was no diplopia, and the pupils reacted fully and promptly. The temporal side of

the left optic papilla was slightly pallid. No other abnormalities were found. The blood was repeatedly negative to the Wassermann test.

Summary.—The more important findings thus were hypotonia and hypoaesthesia to deep pressure of the calves, loss of Achilles, patellar, one gluteus reflex, and diminution of bulbo-cavernosus, one gluteus and one patellar reflex. Symptoms to be explained were the hyperaesthesia over some root distributions.

Important negative symptoms were the normal diadokokinesis, the prompt pupil reaction, the practical absence of ataxia and Romberg's sign, lack of history of lues, and a negative Wassermann reaction.

Diagnosis.—But although lumbar puncture was refused, a pretabetic state was affirmed on account of the nature and unequal partition of the reflex and sensory disturbances and the intermittence and radicular distribution of the latter. Deep hypaesthesia of the lower part of the calf, and loss of the Achilles reflex alone are indeed strong indices of incipient tabes.

This state is really a mild radiculitis; and it is this which accounts for the hyperaesthesia over certain areas revealed by this patient. I am surprised that it is not more often recorded. The failure to do so shows how seldom tabes is diagnosed in early stages by sensory perturbations. The importance of an exploration of the sensibility is nowhere more manifest.⁴

DIFFERENTIAL DIAGNOSIS.

Had there been *neuritis*, the calves would have been over-sensitive instead of the reverse; besides a multiple neuritis would not have entirely missed the arms. Furthermore, a localized neuritis of eleven months standing could not fail to produce muscular atrophy. Besides which, the pains of neuritis do not intermit for days at a time, as had with this patient.

There could hardly be question of cerebellar disease in this case, there being no dysergia whatever, and vertigo being absent. A spinal tumor would have caused intense boring pain in the back and a much more continuous pain in the leg; besides which, spinal-cord symptoms would surely have developed after eleven months. Tubercular pachymeningitis, too, produces pain and stiffness in the back; and neither was present. Pernicious anaemia cord changes were not in question, as no vascular, nutritional or haemopoietic symptoms appeared.

Treatment. Biniodide of mercury (4 per

cent. solution) minims 10, was injected into alternate glutei every other day. The quantity was soon increased to m. 20 twice weekly. In consequence, the pains began to diminish after ten days. They were no longer aggravated when he had a cold as formerly; and he ceased to lean against the furniture, as his muscles no longer felt strained and he was stronger in general. After five weeks, the treatment was suspended. The pains ceased entirely for about a month, and then began to recur, so that he had to resort to codeine and phenacetin. The Wassermann reaction had remained negative until early in January when a faint positive appeared. Salvarsan was decided upon and half a gramme was given intravenously on January 20th. The pains were relieved for a little over a week only; and on February 1st were decided. The sero-reaction on that day was weakly positive; on February 8th, it was more so, and on 16th it became decidedly so. That day I began another mercurial course (of alternate intramuscular and intravenous (HgCl_2) injections), as the pains were becoming very severe. It was not, however, until March 4th that they were attenuated by the drug.⁵

Lessons to be Drawn from this Case Are:

(1) That proper clinical examination, with a careful neurological technique, permits of a diagnosis of the pretabetic state in spite of a persistently negative Wassermann reaction.

(2) That hyperaesthesia of radicular distribution does not prevent a diagnosis of incipient locomotor ataxia. Indeed, it should be not infrequent in the early stages before the nerve path through the posterior roots has been blocked by inflammatory exudates.

(3) That intensive administration of mercury preferably by injection will abolish the pains in the early stages. Paræsthesiae and even pains when due to the contraction of scars upon the inflamed roots will not be removed by antiluetic treatment—at least not until the cicatrix has completely contracted and sensation has been entirely abolished.

(4) The pains and the paræsthesiae may recur when treatment is suspended, even though the Wassermann reaction remains negative. This is the case after salvarsan as well as after mercury.

As to salvarsan, it is evident that it does attack the radicular lesions of tabes. As it has been proved to be much less toxic to nervous

tissue than is mercury, its superiority as a remedy may one day be established, provided that the troponemata do not acquire an immunity to this drug when it is often repeated, as will prove necessary in view of the rapid relapse of this case and others which have been reported.

NOTE.—Since the above was written the patient has received salvarsan again intravenously. After relief for three weeks and great improvement of nutrition, the pains returned again. He is now taking mercury injections once more.

It is worth note that relapses have occurred in every case of pretabes to whom salvarsan has been given by me by the intravenous route; whereas, in two cases where the drug was injected into muscle no relapse has yet recurred four and a half and four months, respectively, after the injection, the Wassermann reaction still being negative and no symptoms having recurred. The first of these cases (referred by Dr. J. W. Mitchell, of Philadelphia,) was one of eight years' standing, but very slowly progressive, there being no ataxia nor marked sensory loss, although the Achilles and patellar reflexes were absent and the Wassermann was positive.

The other case was seen with Dr. H. H. Donally, on account of intense headache, as well as ataxia. On my recommending intensive antiluetic treatment, the salvarsan was procured with difficulty. The patient was later exhibited before the Society of Mental and Nervous Diseases by Dr. Ruffin. Completely alleviated as regards pain and almost so as to ataxia. I am informed that no further symptoms have appeared and that the Wassermann reaction continues negative.

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THE PROGRESS OF GYNECOLOGY IN 1910.*

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Most of the great problems of gynecology having been solved previously, 1910 has no surprising achievements to chronicle in that special field of medicine. And yet the pioneer work is not finished. Even if such general diseases as cancer and tuberculosis are considered, we find special interest is at once apparent should these diseases primarily attack the female generative organs. The plan of attack is different in the treatment of such diseases in special fields, although specific general treatment may in the future be found effectual.

Carcinoma.—Levin (*Am. J. Obst.*, 1910, LXII, 201,) has contributed a very interesting paper on cancer of the uterus, based upon a study of 613 cases of the disease in the foremost hospitals of New York. He first divides cancer into two large classes—one that occurs in regions (skin, extremities, mouth, etc.) in which the influence of an external irritant is very apparent. The other, in which such influence is not apparent, consists mainly of the parenchymatous organs. Here the constitutional reactivity seems to be the most important causative factor and heredity most marked. Regarding the evidence of the influence of constitutional reactivity, Levin says: "The experimental research has so far only indicated how to search for this primary cause, it has proven that any normal cell can be transformed into a malignant cancer cell by the aid of an external irritant, and, further, that a cancer cell may proliferate and retain its malignancy when introduced into one host and become innocuous and cease to proliferate in another host. Consequently, the formation of a cancer is the interaction between a certain external irritant and the constitutional reactivity of the individual." Levin does not admit that normal processes, such as menstruation and child-bearing, have any local ætiological influence. He believes we should continue to study the influences of civilized life upon human tissue as compared to absence of such cause in the savage.

Primary cancer of the Fallopian tube was treated very fully in the January number of *The Journal of Obstetrics and Gynecology of The British Empire*. Doran, Herbert, Spencer,

*Read at a meeting of the Medical Society of the District of Columbia, January 18, 1911.

Tate and Legg reported carefully studied cases and commented at length on the subject. Doran tabulated 38 cases. In 100 cases he collected, the youngest victim was twenty-seven years.

Of the 38 tabulated but two were under thirty years, and while 10 were between forty-five and fifty, 20 of them were older. The disease rarely occurs before the menopause, but is most common at or shortly after that period of life. Of the 27 in which pregnancy is mentioned 8 were sterile. Menorrhagia and vaginal discharge with pain were the most constant symptoms. Free watery vaginal discharge was a marked symptom in over twenty-seven per cent. In 34 a swelling of some kind was noted, ranging from a distinct resistance in a vaginal fornix to an abdominal tumor, but uterine fibroids and ovarian cysts, exclusive of tubo-ovarian cysts, were each present in four cases. In two ascites was noted. Doran claims that in marked contrast to benign papilloma of this structure, the fimbriated end closes very early. In twelve the disease was bilateral. Early extirpation of uterus and appendages is advised. Glendining records two cases of carcinoma of the tube and ovary secondary to cancer of the stomach. He believes from a study of these cases that cancer cells floating in the peritoneal fluid are swept into the lumen of the Fallopian tube, and there coming in contact with the lining, pass through the columnar epithelium to enter the lymphatic spaces of the subepithelial and muscular tissues, and so pass into the mesosalpinx. In this connection I will refer to the paper of Palmer (*Surg., Gyn. and Obst.*, 1910, X, 154) on pelvic transplantation metastasis as a means of recognition of hopeless abdominal carcinoma. After a careful study he concluded that, (1), rectal examination is necessary in all abdominal tumors; (2), of 435 consecutive cases of cancer in the upper abdomen 6.5 per cent. showed pelvic transplantation deposits as the earliest clinical sign of inoperability—over 7 per cent. of stomach cancer had this sign; (3), 55 per cent. more cases were shown to be inoperable through a thorough rectal examination for pelvic metastasis than because of the presence of supraclavicular gland metastasis, and, (4), pelvic metastasis warrants a most unfavorable prognosis as regards life expectancy. Oliguria and chronic uremia in uterine cancer was studied by Offeigeld (*Arch. f. Gynak.*, 1910, XCI, 183), who, influenced by the belief that the kidneys possess an internal secre-

tion, hoped to supply this substance and thus relieve the symptoms of chronic uremia by the employment of a renal extract from beef kidneys. His efforts were unsuccessful, and he concludes that while animal renal extracts are valueless, extracts from normal human kidneys may be useful. In a paper read before the Southern Surgical and Gynecological Association four years ago, I made a plea for the removal of the cervix when the uterine body is removed, using as one reason the subsequent development of cancer in the cervical stump. During the past year this occurrence has received the attention of Chaput, Potherat, Temoin, Tuffier and Hinterstoisser, who report cases and sound a warning note. An advance would be noted if surgeons would make a careful macroscopical examination of the uterine body and its tumors directly after its separation from the cervix and, if found at all suspicious in appearance, removing the cervix at once. In fact, a better technique in abdominal partial hysterectomy for tumors should be cultivated by the average surgeon.

Not much improvement in the treatment of pelvic cancer has been recorded during the year. We find Werder employing the cautery and curette in conditions in which formerly he practiced an extended exsection of the uterus and appendages with their contiguous structures. The current magazines teem with reports of Wertheim operations and efforts are made by many to reduce the time and danger of this procedure without lessening the scope of the operation. Reuben Peterson has strongly advocated the extended exsection giving a report of his work in detail, and again in December, describing to the Southern Surgical and Gynecological Association some further elaboration of technique regarding liberating ureters from adjacent tissue and plan of severing the vagina.

Following the work of Liepmann reported in 1907 and 1908 on the results of bacteriological examinations made at radical operations for cancer of the uterus, Hannes (*Ztschr. f. Geb. u. Gyn.*, 1910, LXVI, 150) has investigated the subjects and reports a reduction of mortality from 30 to 40 per cent. to 21 per cent. by the employment of vaginal drainage. In 20 cases streptococci were found in the parametrium in 5 cases, 4 of whom died of infection. Cultures were made from the carcinoma in 16 cases, none were sterile and streptococci found in 7 of

them. No drainage was used in this series. In another series of 10 cases using vaginal and abdominal drainage streptococci were in the parametrium 4 times (twice in the glands). He claims his mortality from infection has fallen from 20 per cent. in vaginal or no drainage to 7.5 per cent. in combined vaginal and abdominal drainage.

Hoehns, like von Rosthorn and Franz, believes that in properly selected cases recurrence of cancer should be removed by operation. Should it be of a diffuse infiltrating type, operative treatment will be useless, but he believes excision is advisable when the form is more that of a circumscribed nodule, especially if it be in the region of the scar of the former operation. He also advises routine postoperative supervision of uterine cancer patients.

Optimism regarding the ultimate result of treatment of cancer of the uterus maybe neutralized by Seman's paper (*Med. Klinik*, 1910, VI, 1495) in which he reports recurrence in carefully observed cases five to ten years after operation. This author recommends careful palpation and curettage of the endometrium in all abdominal myomectomies, so that whenever suspicion of malignancy of the endometrium exists a radical operation may at once be performed.

Exstrophy of the bladder has been treated, apparently successfully by a surgical procedure described (*Zentralb. f. Chir.*, 1910, XXXVII, 1073) and executed by Makkas and which consists of converting the isolated cecum into a bladder and the vermiform appendix into a urethra. The first step of the operation was done May 10, 1910, on a girl of twelve years, who had an ectopic bladder and vaginal atresia, an anus situated more anteriorly than usual and a very weak sphincter ani. He made an incision 12 c. m. in length through the right rectus muscle, isolated the cecum completely and closed the ends of the divided bowel. The cecum was now easily displaced to the median line. The ileum was divided and both ends closed, and then by lateral anastomosis united to the transverse colon. The appendix, 7 c. m. in length, was passed through a small opening in the abdominal wall just below the operation wound. The distal end was removed and its mucosa sutured to the skin. The large incision was then closed by three tiers of sutures. After the tenth day the cecum was irrigated by means of a Nelaton catheter introduced through

the vermiform, mucus always being thus removed.

The second step was executed June 18th (39 days after the first one) and was as follows: After making an incision around the ectopic bladder, that structure was separated from its bed, the ureters and a considerable patch of the surrounding bladder wall being isolated and carried through a midline, abdominal incision to be sutured into the segregated cecum which was there adherent. The abdominal wound was closed and a Nelaton catheter kept in the new urethra and bladder. No complications. The urine flowed freely, but the reservoir was irrigated several times daily. On the eighth day a stopper was put into the catheter and the reservoir emptied every two or three hours. The capacity increased from 100cc to 325cc. A few weeks after the completion of the operation the urine was allowed to escape every three or four hours during the day, but not during the night. While the quantity was 1,000 to 1,200 cc. daily, the catheter could not be dispensed with. No albumen was to be found in the urine, but mucus was freely mixed with it.

The treatment of advanced ectopic pregnancy with regard to life of the child is portrayed in papers published by Peterson (*Trans. S. Surg. and Gyn. Assoc.*) and myself (*Am. J. Obst.*) which contend the danger to the mother during the latter months of ectopic pregnancy with a living fetus has been greatly overestimated, and that fetal deformities occur in but about eleven per cent. of cases. Consequently, to allow the pregnancy to progress sufficiently nearly to full term to afford the greatest viability to the fetus, and then to rescue it by operation is the most approved plan. Removal of the placenta at the time of operation is advised.

Findley reports a case of *bilateral tubal pregnancy* that ruptured synchronously on both sides. He has found eight authentic cases of bilateral tubal pregnancy in literature and twenty others that are open to doubt. T. G. Wilson has reported an instance of this character in his experience. These two papers may be forerunners of a new theory of the origin of twin pregnancy.

The creation of an artificial vagina was the subject of a paper read at the 1910 meeting of The Southern Surgical and Gynecological Association, by Ferguson. Baldwin's plan of making the vagina from an isolated portion of

the small intestine was discussed and censured and Noble's plan again described by him. Ferguson's plan as adapted to three cases was to make a long and wide anterior flap and after lifting it up make the opening in the rectovesical septum for the vagina. Two latero-posterior flaps were now made with the free ends upward. The bladder is dragged down through the new opening and the large anterior flap sutured in two places to it. The rectum is now pulled outward through the new opening and each of the other two flaps are sutured to it by two stitches. Afterward the employment of plugs is necessary for varying periods. The Noble and Ferguson methods are very much superior to older plans employed.

The influence of the Trendelenburg position in surgical operations was a subject of special study by myself during 1909-10 and resulted in demonstrating that not all its advantages were without their offset. It was found that with ether as the anæsthetic used the decrease in quantity of urine was 58 per cent. and with chloroform the reduction in quantity amounted to 93 per cent. These figures are regarded as being very surprising. They refer clearly to kidney elimination.

The treatment of retroversio-flexio uteri has interested Adler (*Monatssch. f. Geb. u. Gyn.*, 1910, XXXII, 228), who has recently devised an operation for the purpose when the uterus is movable. It consists essentially of vaginal fixation of the round ligaments in the region of the urethra. He has not published it. When the organ is adherent in the virgin or complicated by adnexal disease he prefers a modification of the Gilliam operation.

Heaney, of Chicago, has written quite at length on the subject of *periodic intermenstrual pain* (*Surg. Gyn. and Obst.*, 1910, XI, 361) which he finds is most common during the age of greatest sexual activity, twenty-five to thirty-five years, and in married women. It occurs midway between the menstrual periods and is absent in amenorrhea. It usually begins in one side of the abdomen, more frequently the left. The onset is spasmodic with intervals of complete cessation. Later it extends over the whole abdomen and becomes more or less continuous. It usually lasts two or three days, but may continue until menstruation begins, and then entirely cease. It sometimes is accompanied by a thin watery mucoid discharge or a scanty bleeding.

All cases operated upon showed some pathological condition of the uterus or adnexa, or both. It is attributed to insufficient or abortive attempt at menstruation, there being degeneration or sclerosis of the uterus and ovaries.

The repair of inaccessible vesico-vaginal fistulae following hysterectomy is thoroughly discussed by G. G. Ward, Jr. (*Surg. Gyn. and Obst.*, 1910, XI, 22). He says that such a fistula is usually small, situated in the vault of an atrophic and contracted vagina, and embedded in the scar tissue which occupies the former position of the cervix, thus rendering operation for its cure extremely difficult, owing to its inaccessibility. The steps essential to cure by the method which he employs are: (1). The differentiation from a ureteral fistula by distension of the bladder with an aniline solution. (2). Deep paravaginal incisions (Schuchhardt). (3). A longitudinal incision of the anterior vaginal wall from the urethra to the vaginal vault through the fistula and extending into the posterior vaginal wall, and a lateral incision extending the full width of the vaginal vault. (4). Thorough separation of the base of the bladder from the entire vagina and vaginal vault. (5). Evisceration of the bladder into the vagina by means of a sound passed through the urethra. (6). Closure of the opening in the bladder separately from the vaginal incision. Suprapubic methods are to be employed only in the presence of failure by the vaginal route, since the latter is less dangerous and offers good chances for cure.

That this is a troublesome class of cases will be recognized by all who have attempted to relieve them by surgical procedures and his paper is a timely one as well as practical and scientific.

Goetze has studied 105 cases of *myomata and pregnancy*, and concludes (*Ztschr. f. Geb. u. Gyn.*, 1910, LXVI, 340,) small subserous myomata have no influence upon conception, but with increasing size the chances of conception are lessened, although not entirely excluded even by very large tumors. The prognosis varies with the site of the tumor, being most unfavorable in the submucous variety, especially when associated with extensive alterations in the endometrium. Interstitial myomas lessen the likelihood of conception. Tumors of the cervix seem to offer greater obstacles than those of the corpus. If

pregnancy does take place myomas increase the danger of abortion. In the absence of other lesions which are conducive to sterility, myomectomy undoubtedly increases the chances of conception, the prognosis being more favorable the less radical the operation required, as in cervical and subserous myomas, the less the alterations in the endometrium, and the earlier the diagnosis is made. If myomectomy is not possible an interstitial myoma of some size in a woman of 30 years practically excludes any hope of conception.

Edward Reynolds has published a paper (*Boston Med. and Surg. J.*, 1910, CLXIII., 113,) on the interesting subject, *Gynecological Operations on Neurasthenics*, commenting on the advantages, disadvantages and selection of cases. He attempts to define neurasthenia, which is typical of his courage. He particularly emphasizes the necessity for carefully studying chronologically the pelvic lesion and the symptomatology. In the absence of a reasonably close chronological sequence between general and local symptoms, local treatment should be withheld and general measures employed. When neurasthenia has developed secondary to a well defined lesion, and if such a lesion is curable, operation is recommended. Such an operation should aim to repair, rather than to remove, the diseased organ, especially in women who have not reached the menopause.

Genital prolapse has been studied by R. L. Dickinson (*Am. J. Obst.*, 1910, LXII., 17,) and he has given the deductions drawn from his studies along the line of its operative corrections, having cleavage lines and sliding segments as the viewpoint. He summarizes as follows: From the point of view, either of pathological anatomy or surgery, frozen sections show the importance of recognizing certain cleavage planes in the pelvic diaphragm and intervening segments that slide. The cleavage runs (1) post pubic, close to the bones; (2) in the urethro-vaginal septum; (3) in the rectovaginal septum, and (4) along the anorectal canal. If the urethral segment falls any considerable distance, only ventral fixation at the rear or top of the pubes will hold the upper urethra and anterior bladder wall. The second segment (vagina, bladder-base, cervix) is the common hernial mass. A convenient nomenclature would be intravaginal cystocele; extravaginal cystocele, protruding

beyond the hymen on straining, and complete extrusion, bladder, cervix, uterus, one and all. For the worst cases Dickinson employs ventral fixation of the bladder, whether vaginal hysterectomy is done or not. The recto-anal segment, when very badly prolapsed, particularly in the presence of protrusion of the uterorectal pouch, may call for sigmoid fixation; and the wideopen long outlet of the pelvis may present no tissues out of which a diaphragm can be built, so that flaps from the buttocks may be required.

The treatment of the subject in this manner is not only unique but very instructive.

The reflex relations existing between the uterus and other organs of the body, especially the breasts, gastro-intestinal canal, nose and bladder, have been commonly recognized by clinicians, based purely upon clinical observation or the acceptance of empirical facts as handed down from generation to generation. Therefore, but little effort has been made to prove by actual experimentation the truth or fallacy of these observations, or to determine the pathways by which such reflexes are carried. In a most interesting and instructive article, E. Kehrer (*Archiv. fur Gynak.*, 1910, XC., 169,) reports in full the results of his painstaking and difficult experiments concerning this important subject. Following a concise description of the general technique employed, he details his methods of procedure upon the different organs and summarizes freely his conclusions, only a few of which will be mentioned here. The most intense reflex influences upon the uterine movements were produced by irritation of the gastro-intestinal canal, especially of the colon. Stimulation of peristalsis by mechanical or chemical stimuli was accompanied by increased uterine contraction. Inhibition of peristalsis as produced by artificial distension of the stomach and segments of intestine produced likewise an inhibition of the uterine movements, a stage of rest with muscular relaxation. Division of the vagus or pelvic nerves produces a slight transitory inhibition of the uterine contractions; division of the sympathetics is accompanied by intense excitation. The afferent pathway for both inhibitory and stimulating impulses from the stomach and ileum is through the splanchnics: from the colon through the hypogastrics. The efferent section of the reflex arc is through both

splanchnics and hypogastrics. The reflex center for the entero-uterine connection lies in the prevertebral ganglia. Dilatation of the bladder and ureters leads to reflex inhibition, contraction of the bladder to reflex stimulation of the uterine musculature. Even after complete division of the hypogastric and pelvic nerves the vesico-uterine reflex persists, showing the presence of an independent reflex mechanism. Kehrer was unable to determine definitely the paths of the reflex between the breasts and uterus.

During the year interest in *vaccine therapy* has not abated, but the results obtained are not conducive to great optimism for the future success in it. The American Gynecological Society had a special committee studying the subject. That committee, composed of three leading obstetricians—J. Whitridge Williams, E. B. Cragin and F. S. Newell—reported at the meeting of the Society in May, 1910. They state that as the opsonic index is subject to great variations and is technically difficult, its practical value is doubtful. Immunization by vaccines is a well established preventive measure against typhoid fever, plague, cholera and dysentery, and in local infections by the staphylococcus or tubercle bacillus it is valuable. With other infections its value is doubtful. In acute general infections it has failed. It is occasionally curative in chronic gonorrheal arthritis and urethritis. It is unreliable in the vulvovaginitis of children. In infections of the urinary tract by the colon bacillus and in the pyelitis and pyelonephritis of pregnancy it is not superior to other forms of treatment. It has been found of slight value in some forms of endometritis after curettage.

Peterson, in writing on *gallstones during pregnancy and the puerperium*, states they are most common between the ages of 25 and 35 years and that pregnancy undoubtedly conduces to their formation. At about the fifth month of pregnancy, when the uterus is approaching the level of the umbilicus and pressing the intestine against the liver, the liver pain is noticed. In the puerperium the symptoms, chill, fever and jaundice are usually manifested during the first seven days. Sixty per cent. of pregnant patients suffer more or less from jaundice. It occurs about one-sixth as often in the puerperium. The mortality of operation during pregnancy was 13.04 per cent., while during the puerperium furnished a rate

of 11.01 per cent. In more than half the patients the gallstones were intra-cystic.

Operations upon the gall-bladder do not appear to be more apt to interrupt pregnancy than do other abdominal operations. If the patient is in a good condition operation should be delayed until the child is viable.

Polak (*Surg. Gyn. and Obst.*, 1910, XI., 49,) read a paper at the meeting of the American Gynecological Society entitled "When Shall Operation Be Done for Puerperal Septic Infection," based upon a study of 200 cases. He concluded that operation must be determined by the merits of each individual case only; that so long as the patient is improving, interference should not be made and that care must always be exercised against rupturing the protective barriers which Nature establishes in these cases. Vineberg reported six cases in which he ligated the pelvic veins and performed hysterectomy in the treatment of puerperal septic infection. Montgomery also advocates operations under careful restrictions and always with a minimum of traumatism.

Following his paper read at the 1909 meeting of the American Gynecological Society on the employment of the abdominal route for operation on pelvic fascia in prolapse, Polk, at the meeting of 1910, reported several cases in which he had carried out this plan without evidence of failure in any of them. Being a procedure planned along logical lines, much may be expected from it in the treatment of the various prolapses of pelvic structures.

Considerable interest has this year been manifested in the management of ovarian tumors complicating pregnancy.

Marshall (*Jour. Obst. and Gyn. of Brit. Emp.*) has not only carefully studied the literature of the subject, but reported eight cases. Interest to the average physician is limited to the treatment. It may be said operation is indicated as early as possible. If first recognized during labor and that process can be finished it should be permitted and the tumor removed during the next week. But if the tumor has ruptured or been incised to permit labor to be terminated, ovariectomy should usually be done during the next two days.

Several additional subjects have been well studied during the year 1910, but I think I have already severely taxed your attention and patience. Therefore, I will not comment on them here.

It will be seen that the gynecological investigator and the obstetrician need not feel that because the large problems are solved nothing more is to be done. There will always be questions in medicine to be solved, and the worker need never be sorrowful because of a different opinion. Many important subjects are being earnestly studied, and that the year 1911 may mark the completion of them we may hope, and if we cannot a year hence glory in such result we will not lose hope.

The Rochambeau.

THE TREATMENT OF GONORRHEAL INFECTION IN THE MALE.*

By JOHN R. LITTLEFIELD, M. D., Cumberland, Md.
Surgeon Western Maryland Railroad, Assistant Surgeon Western Maryland Hospital.

The gonococcus of Neisser probably causes more suffering to the human race than any other organism, two causes operating to make this true:

First—A disposition on the part of some patients to belittle their disease, causing them to cease treatment before the disease is eradicated.

Second—Carelessness on the part of their physicians—either by a careless or disinterested line of treatment, or by failing to impress upon his patient the necessity of a thorough cure.

Gonorrhœa in the acute stage may be either acute anterior urethritis or acute posterior urethritis, or both; certainly under the old line of treatment both conditions existed after the third week in 80 per cent. of cases. But today we do not expect posterior involvement in more than 40 per cent. of the cases if we are consulted early.

The patient's urine should be examined at each visit by the two-glass urine test to determine if posterior involvement has occurred.

Upon his first visit general instructions should be given him as to the importance of care in cleanliness of his hands in order that the infection may not be carried to his eyes, abstinence from alcoholic beverages, stimulating articles of diet, such as meats, highly seasoned foods, and condiments, the necessity of wearing a suspensory bandage, and drinking large quan-

ties of pure water, and as much rest in a recumbent position as possible.

The anterior urethra should then be irrigated with protargol, 1-500, either with a Valentine irrigator or a large syringe, about one quart of the solution being used at least once daily for the first five days. He is given a prescription on his first visit for a solution of protargol, eight grains to four ounces of water, or argyrol 10 per cent. solution, and instructed to secure a blunt pointed syringe of a capacity of at least three or four drams. This solution is to be used four times daily, after urinating, and to be retained at least ten minutes. This may be accomplished by the patient compressing the meatus with his thumb and forefinger or by means of a small rubber band placed around the corona.

It is worse than useless to employ a syringe smaller than three drams, as this amount of fluid is necessary to distend the urethra in order that the antiseptic fluid may reach all the diseased parts. The patient is also given a capsule containing oil of santal and fluid extract of kava kava. This capsule is now on the market under the name of gonosan. The pain on urination usually ceases after twenty-four to forty-eight hours by this line of treatment and but very little discharge is noted after the fourth day.

About the end of the third week the urine becomes clear with shreds floating in it, and this is an indication for the use of an astringent irrigating solution. I usually use permanganate of potassium, 1 to 8000, containing silver nitrate, 1 to 10000, and increase its strength at each subsequent visit. This sometimes causes a little reaction, manifested by an increase in the amount of the discharge. If during this period the urine should again become cloudy, we must then discontinue the astringent solution and return to the silver albuminate salts. During the time the patient is getting the astringent irrigation, he is using a solution of picratol, 1-1000, in his hand syringe or Ultzman's injection.

If the cases progress favorably at the end of the fifth week all treatment is stopped, and if no relapse occurs he is instructed to drink beer at the end of the sixth week and report at the office the following day.

In the anterior cases that become chronic—

* Read before the Cumberland Academy of Medicine, Cumberland, Md., February 8, 1911.

i. e., after ten weeks, in addition to the above line of treatment, the urethra is dilated with sounds to break up the small-cell infiltration that occurs. Other cases will require the use of the endoscope and the cautery to destroy the focus of infection in a Morgagni crypt or Littre's gland, or the application of a solution of silver nitrate, 10 grains to the ounce, to the mucosa by means of an Ultzman's brush apparatus. Irrigations of mercury oxycyanate, 1-2000, may also be used. Also applications of copper lactate, 2 per cent in glycerine.

In cases with posterior involvement the same line of treatment may be pursued, but after irrigating the anterior urethra, about twelve ounces of the solution should then be placed in the bladder and the patient instructed to urinate ten minutes after leaving the office.

For the tenesmus and frequent micturition, oil of santal is the standby. I would not advise any of the alkaline diuretics, as they render the urine less acid, or alkaline in reaction—thereby removing the inhibiting influence of the acid normally present in the urine, and permitting a free growth of the gonococcus.

In the chronic cases, both anterior and posterior, dilatation of both anterior and posterior urethra must be practiced with the irrigations, and the condition of the urine must be an index to the nature of the irrigating fluid, bearing in mind that an astringent solution is detrimental so long as the urine is cloudy with the admixture of pus.

In the chronic cases the prostate gland and seminal vesicles must be examined, and, if diseased, the gland must be massaged, the vesicles stripped, and this followed by an irrigation at least once in five days.

In chronic involvement of the prostate, a 2 per cent. ointment of carbolic acid may be applied with Young's applicator, and will give good results. Some of the chronic prostatic cases will give excellent results if a bacterin of gonococcus and colon bacilli is used, and sometimes the addition of staphylococcus bacterin. I have never seen any results follow a pure bacterin of gonococcus. In the acute cases of prostatitis, rest in bed, bland diet, cold irrigations of rectum and keeping bowels soft is about all we can do until fluctuation occurs; then opening the abscess is imperative, but

never through the rectum—always through the perineum.

Epididymitis is another troublesome complication at times, but in the majority of cases the pain may be abated in three or four hours by making an incision in the scrotum and puncturing the epididymis, or by multiple punctures of the scrotum into the tunica vaginalis. No pus will be seen and not a great deal of blood, but the relief will often be found to be marvelous. I usually apply a hot bichloride compress, 1-4000, after puncture or incision. Applications of hot lead water and opium, ichthyol, or guaiacol 20 per cent. ointment, are all used in this condition, but I prefer the puncture or incision.

Inguinal adenitis may usually be controlled by the application of ichthyol 20 per cent. in iodine ointment. If this does not cause an abatement of the pain in twenty-four hours I order the patient to bed, apply the same ointment and place a sand-bag over the bubo. Of course, if suppuration occurs, an incision must then be made and a 20 per cent. iodoform emulsion in glycerine injected.

Gonorrhœal arthritis is best treated by plaster cast, rest in bed for five or six weeks, and ascending doses of Neisser bacterin.

I recall seeing but one case of gonorrhœal endocarditis; this was before the days of bacterin. The patient ran a typical septic temperature for nearly four weeks and died. We posted him and recovered a pure culture of gonococcus from the heart valves.

In closing, I would like to say that I think that one of the greatest duties of the physician is to impress upon every patient coming before us with a gonorrhœal infection the seriousness and far-reaching effects of an uncured case, and make him understand that 99 per cent. of the cases of "weakness" and "gleet" are only cases of gonorrhœa in some form, and are still infectious.

DIAGNOSIS AND TREATMENT OF ABDOMINAL INJURIES.*

By W. L. POWELL, M. D., Roanoke, Va.

The most frequent causes of abdominal injuries are gunshot wounds, railroad accidents, such as being pinched between cars, runaway accidents, etc. The physician as well as sur-

*Read before the Southwest Virginia Medical Society, at Bristol, Va.-Tenn., December 15-16, 1910.

geon is often at sea as to what course to advise—conservative treatment or immediate operation. The life of the patient often depends upon the accurate diagnosis and treatment during the first few hours following the injury.

The first thing to be considered is the history; the nature of the force causing the injury; the direction in which it was applied, whether from the front or in an oblique direction, whether by a blunt or sharp instrument.

The symptoms usually present are rapid pulse, pinched and anxious expression, cold and clammy skin, vomiting, sub-normal temperature and lowered blood pressure. The patient is pale and complains of abdominal pain, which may be localized or general. There is tenderness on pressure, which is in proportion to the extent of the injury; the rigidity which is always present is less marked in contusions than in intra-abdominal injuries and disappears to a great extent within a few hours. The vomiting of, or passing blood by the bowels, is not necessarily diagnostic of intestinal rupture; if such a condition exists, the reaction is much slower, the abdominal rigidity increases as well as pain and tenderness. In a few hours the symptoms of peritonitis begin to make their appearances, with tympany and gaseous distention and absent or diminished liver dullness. By this time it is too late to operate with any degree of success.

One of the most frequent types of injury with which we have to deal is gunshot wounds of the abdomen, and their treatment in civil and military life differs. The recent Boer and Russo-Japanese wars have changed the opinions of the most eminent surgeons in regard to the treatment of these cases. The statistics gathered in the Boer war show a higher mortality of those operated upon in field hospitals, where the facilities are inadequate and proper after-treatment nearly always impossible, than those in which there was no operation. This is explained by the fact that the small steel-jacketed bullet of high velocity does not possess the same explosive power, especially at a distance of 250 yards or more, as does the lead bullet, and in many cases the mucous membrane bulges, or the muscular coat contracts, closing the intestinal wounds, preventing leakage and allowing time for adhesions to form.

Bomhaupt contributes a most interesting article upon the subject. He observed 162

patients with gunshot wounds of the abdomen, but they did not come under treatment until some days had elapsed. The summary of his results shows that non-operative treatment was followed by 70 per cent. recoveries, most of the remaining 30 per cent. were operated upon later with a mortality of 46 per cent. These statistics probably do not take into account those cases which died of hemorrhage and perforation within a few hours after injury and which could have possibly been saved by prompt laparotomy under proper surroundings.

Unfortunately the mortality from penetrating wounds of the abdomen in civil life is very high, especially those who have not had the advantage of early operation. The mortality in all cases operated on under good surroundings within six hours after injury is about 66 per cent., those in which no operation was performed about 95 per cent. The earlier the diagnosis is made and the operation done the better the chance of recovery.

Unfortunately there are few patients who present typical symptoms of intestinal perforation or visceral rupture. I recall a case seen at the Philadelphia Polyclinic Hospital during my resident service there, which illustrates the absence of symptoms frequently presented.

The patient, a negro, age about 22, splendid physique, walked two or three squares to the Hospital. Examination showed pulse full and slow, no symptoms of shock, very little abdominal rigidity and tenderness. About two inches to the right of third lumbar spine a small bullet wound was found; upon passing probe, it was found to go around to the right following the fascia. The bullet was found beneath the skin just to right of midline in front with the rounded end towards the center. Removal was done under cocaine, and probing produced the same result as from behind. We came to the conclusion that the patient was shot from an oblique direction and the bullet followed course of fascia. Conservative treatment was decided upon as constitutional symptoms were practically absent.

His condition remained about the same for twelve hours when he was seen by the Surgeon-in-Chief who agreed with the diagnosis. The patient died 36 hours after injury and autopsy showed 8 or 10 perforations of intestines and fecal contents in the abdominal cavity.

In many cases of intra-abdominal injury

there is no intestinal rupture, but there may be severe contusions of the gut wall which may ultimately lead to gangrene, or there may be hemorrhage from rupture of liver, spleen, pancreas, or from the mesenteric vessels. We have all seen cases in which we were in doubt as to what course to pursue, and have probably stood by and seen our patient go to fatal termination without recognizing that there was a severe injury which required prompt surgical interference before it was too late to do any good.

I believe that even in fairly good surroundings, we are not only justified, but that it is imperative to operate on all cases which have received an abdominal injury, in which there exists the slightest doubt as to whether there is visceral rupture or hemorrhage. We must remember that if no intra-abdominal injury exists the patient has been done no harm, and if there is visceral injury or hemorrhage, prompt laparotomy is the only thing that holds out any chance of recovery.

I take this opportunity to report a case showing the amount of damage possible, and the result of early operation.

I was called at 1 A. M. by Dr. Branch to see patient, J. L. B., age 52, blacksmith, well-developed, had been shot with pistol at short range. Examination showed all symptoms of shock, some abdominal rigidity and tenderness. Wound of entrance was two and one-half inches to left and one-half inch above the umbilicus; the bullet was felt beneath the skin one inch to left of spinal column and about one inch above the posterior superior spine of ilium.

Immediate operation was advised, which I did at 3 A. M., two and one-half hours after injury. An incision was made through left rectus, and the abdomen was found to be full of blood and some intestinal contents; close examination showed six perforations of small intestine and four of mesentery, from which there was free hemorrhage. The perforations were closed with purse-string sutures, the vessels ligated, and gauze drainage inserted to flanks and cul-de-sac. Fowler's position and proctoclysis with moderate stimulation were likewise used. The urine before and after operation contained albumin, about 1 g. m. to liter, and granular and hyalin casts.

Patient did well, and the bullet was removed

under cocaine nine days after operation. Surely this case would have stood no chance of recovery without early operation.

In closing, I would like to repeat that immediate operation is the only rational treatment if there is the slightest doubt as to whether there is an intra-abdominal lesion or not, regardless of the nature or direction of force causing the injury. If the conditions are such that immediate operation is impossible, place the patient in a sitting posture in bed, use proctoclysis, and give nothing by mouth.

THE MEDICAL TREATMENT OF INGROWING TOE NAIL.*

By STEPHEN HARNESBERGER, M. D., Catlett, Va.

The subject needs no explanation. The mild cases annoy, the severe torture. Ingrowing toe nail is classed as a surgical affection. Its treatment is only found in text-books on surgery. The surgical treatment consists in the excision of a part or all of the offending nail. Such an operation necessitates local or general anesthesia. Both are more or less dangerous, and the after-care is not only inconvenient, as it keeps the patient quiet or on crutches, but it is also expensive, as it retains the services of the surgeon and restrains the patient from business; besides being, to say the least, annoying, as it always causes medium or maximum suffering for some days thereafter.

Surgical intervention, which is surgical interference, is no longer to be considered as a treatment for ingrowing toe nail. The worst cases, where there is inflammation and ulceration, with or without foul discharges, or where the corner of the nail perforates the soft parts of the toe, avulsion, with its subsequent granulation and other attendant evils, is not necessary—in fact, is not justified. The painless local treatment of this toe condition has served me well during all the years of my practice. By making the applications myself, I can get just as good fees for doing the work without anesthesia and without the knife, as the surgeon gets with anesthesia and with the knife.

HOW IT IS DONE.

First, I cleanse the unhealthy soft parts, using, if necessary, some reliable antiseptic solution or soap, with or without a brush, as

*Read by title before the Tri-State Medical Association of Virginia and the Carolinas, at Raleigh, N. C., February 22-23, 1911.

the case may be. Then, after drying the cleansed parts thoroughly, I apply liquefied carbolic acid (one drop usually) to the most sensitive point and as near the corner of the nail as I can get it. If the toe is well protected by clean gauze, I have the carbolic acid used once a day, with or without recleansing, until the soft parts are healed and hardened and the point of the nail is lifted out of the socket it has formed in the flesh.

If the carbolic acid does not seem to give satisfactory results, which will seldom happen, or, perchance, fails altogether, then use the following powder:

R Thymolgr. x—xij
Mentholgr. x—xij
Boracic acid.....3j
Alum q. s. ad..... 3ss

The alum should be finely pulverized and thoroughly dried. Triturate all and apply freely. In mild cases the powder can be left on until the parts heal. The bad cases can have the applications renewed as thought best. A thin rubber cot should be worn on the affected toe to keep the remedy in place and to protect the parts from possible outside infection. Unless the secretions stain the powder, the applications need not be renewed every day, unless for the moral effect on the patient.

If it is necessary for the patient to go about, the affected part can be protected by properly applied pieces of thick felt kept in place by adhesive strips. Usually a piece applied to the inner side and top of the toe just back of the painful point, gives ample protection; and, not only wards off painful pressure of the shoe, but hastens the healing process. I have never seen a case so bad that it could not be cured by mild local means.

It seems to me that it is not so much the antiseptic as it is the hardening action that we want, though a combination of the two perhaps works better. And this is exactly what we get when we use carbolic acid and the alum compound.

I have used other combinations with success, and no doubt there are many "just as good," or better. The thoughtful physician will, however, readily select remedies of his own suggestion.

But I like the carbolic acid-alum combination best. Try it. It is simple, it is cheap, and it does the work—just the kind of treatment we should most desire; certainly the kind most to be desired by our patients.

Analyses, Selections, Etc.

Autonomic Manifestation and Peripheral Control of the Pain Originating in the Uterus and Adnexa.

Reed, of Cincinnati, says that the word "autonomic," as applied to the manifestations of pain of visceral origin, signifies the expression of that pain in some superficial muscle or muscles rather than in the viscus in which it has its initial causation. Three factors are involved: (1) Some more or less profound disturbances, functional or organic, of certain of the viscera; (2) the transmission of a painful impulse, thus originated, over or through what Head has designated as the autonomic nervous system; (3) the registration of that impulse and its expression as pain in the muscle or muscles to which the respective external or peripheral autonomic filaments (muscle nerves) are distributed.

He divides the genital organs in three zones: (1) The first or upper genital, consisting of the fundus of the uterus, the Fallopian tubes and the ovaries, supplied by sympathetic branches from the hypogastric plexus through the plexus of the ovarian arteries in the broad ligaments; sensory branches from the twelfth dorsal and from the first and second lumbar nerves; autonomic filaments afferent from the zone indicated to the spinal centers. Their terminal distributions are to the intertransverse, to the quadratus lumborum and to the two psoas muscles.

(2) The second or middle genital zone, consisting of the cervix uteri, to which are supplied sympathetic branches from the lower ganglia; sensory branches from the second, third and fourth sacral nerves; autonomic filaments afferent from the cervix to the spinal centers through (a) the communicating branches of the sympathetic; (b) the second, third and fourth sacral, distributed to the two gluteal muscles, to the quadratus femoris, the coccygeus and the levator ani muscles.

(3) The third or lower genital zone, consisting of the external genitalia, including the vagina, is not considered in this connection.

Treatment is emphasized as follows: (1) Visceral pain, so far as the abdomen, pelvis and thorax are concerned, is expressed chiefly, but not exclusively, in the autonomic algietic areas

of the protective walls covering the respective viscera, such algetic areas corresponding in extent with the peripheral distribution of the autonomic nerves coincidentally with the peripheral distribution of the respective spinal nerves in the muscles and subserous connective tissue; (2) these distributions can generally be determined clinically by determining the area of partial hyperalgesia; (3) the pain itself, consisting chiefly of hyperexcitation of muscle irritability, can be partially, and, as a rule, entirely, inhibited by inhibiting the muscle sensibility in the hyperalgetic areas; (4) the same principle applies to the peripheral control of pain originating in the par-turient uterus, with the difference that the infiltration of succeeding muscle zones must be practiced with the corresponding advance of delivery.

The following solution is used:

Morphin hydrochloride.....	.01
Novocain04
or	
Scopolamin0015
Normal salt solution.....	1.

This is a single dose which is diluted with physiologic salt solution in sufficient quantity for numerous deep injections with an ordinary hypodermic needle in the hyperalgetic areas. For analgesia, the mixture is injected into the muscular layer, care being taken to make the punctures at points that approximately define the circumference of the painful area. Analgesia occurs in from five to ten minutes, and because of the scopolamine, persists for from six to eight hours, in some instances being permanent. For local anesthesia, the same procedure is followed, except that injections are made into the subcutaneous connective tissue.

So that a wider scope may not be given than intended, the author concludes (1) the details of the autonomic phenomena are only beginning to be understood; (2) while he believes that these phenomena, when once understood, may be classed among the clinical constants, he does not believe that they can have a significance that will justify failure to consider all other diagnostic factors; (3) and he recognizes the possibility and, under certain obvious circumstances, the desirability of temporary control of pain by the method indicated. he does not recognize the possibility that it can ever supplant the rational curative method which

always implies the removal of the cause for the cure of the effect.—(*Journal A. M. A.*, March 25, 1911.)

Thyroid Extract in Chorea.

Percy A. Roden (*Lancet*, 1910, CLXXIX, 1276) reports a case of chorea in a girl, aged ten years, which is interesting from a therapeutic viewpoint. The condition was acute, and the arms and legs were especially affected. The heart was not involved. The child was treated over quite a long period of time with each of the following remedies: Arsenic, potassium iodide with potassium bromide, salicylates and quinine. Absolutely no improvement resulted from the use of these drugs. Brine baths were then employed in a hospital, and the patient's condition was apparently relieved by them. In a month's time the chorea again appeared, with wasting. Cod liver oil, with the bromides and iodide of potassium, having no effect, brine baths were again tried, and again apparently relieved the condition. After several months the chorea reappeared. At this time it was noticed that the two sisters of the patient had goitre, but were in perfect health. On examination, the patient showed no trace of goitre. On the suspicion of thyroid insufficiency, teaspoonful doses of a fluid extract of thyroid gland were administered twice a day with surprisingly good results. The child was able to return to school in the second week. The thyroid was taken twice a day for the first month and once a day for the second month. After nine months had elapsed there had been no recurrence of the trouble.—(*N. O. Medical and Surgical Journal*, April, 1911.)

Twenty Cases of Syphilis Treated With Salvarsan.

Murrell, Richmond, says that salvarsan is no miracle worker and cannot replace that which is lost. Nervous phenomena due to pressure changes and scar tissue are not active syphilis, but the results of the disease. The drug is designed to do one thing only—and that is to kill infectious organisms, particularly spirilla.

The only method of determining whether we succeed or fail with the treatment is the Wassermann reaction, and though this is not certain in absolutely every case, it is the best we have. It is true that the degree of perfection of this delicate test is in a large measure de-

pendent upon the skill of the man who makes it, but even with the most skilful Wassermann's are not infallible.

When a patient gives a positive reaction he should be treated, but a negative Wassermann is no prohibition to treatment. Dr. Murrell states that he has seen one case in the last six months that gave a negative Wassermann, though small gummata, demonstrated as such microscopically, were present in the skin of the forearm.

In concluding, the author says:

1. The intravenous method is the method of choice.

2. Five-tenths gramme of salvarsan is the limit of dosage intravenously for men, and .4 gramme for women of ordinary physique.

3. A negative Wassermann is not contraindicative to treatment.

4. A positive Wassermann is final for treatment, but not indicative of failure if taken within six weeks of administration of the drug.

5. Salvarsan is a specific poison for the spirocheta pallida. Other than this, it has no special action in syphilis.

6. Toxic symptoms after administration are not evidence of therapeutic action.—(*Bull. University Coll. Medicine*, Series 2, No. 38, 1910.)

In connection with the foregoing excerpt it may be timely to call attention to the following:

S. J. Meltzer, New York, states that the sacrospinal muscle is anatomically an exceptionally well isolated large compact mass, densely packed with fine muscle bundles. For this reason it is an especially favorable site for the injection of drugs in solution or suspension, like salvarsan. The drug will remain in the muscle and not affect the adjacent tissues, which is an advantage. The absorption from this muscle is shown experimentally to be greater than from the gluteal muscles, and much better than from the subcutaneous tissue. Clinically salvarsan was found to exert a fairly rapid effect when injected into this muscle, in cases of secondary and tertiary syphilis. The Wassermann reaction was absent after this treatment. The author advocates the injection of salvarsan into this muscle in the treatment for syphilis on account of its efficiency and the absence of pain.—(*Medical Record*, March 25, 1911.)

Principles Underlying the Surgery of the Spinal Cord and Nerve Roots.

Russell S. Fowler, Brooklyn, N. Y., divides the spinal cord into the cord proper, with non-neurilemmatous elements, which cannot be regenerated after injury, and the cauda with the anterior and posterior nerve roots which have neurilemma and can be regenerated. Operative interference is of value only in the portions capable of regeneration. An exact diagnosis of the injury is necessary to give indications for operation. This rests upon the nature of the traumatism, the onset of paralysis, whether immediate or late, the extent of paralysis, and the use of radiography. Extradural hemorrhage gives no indication for operative interference unless increasing pressure symptoms are present. If respiratory embarrassment occurs after a period of natural respiration following injury, operation may do good. If this symptom occurs at once it indicates contusion of the medulla, which will not be benefited by operation. Intradural hemorrhage does not indicate operation, unless increasing pressure symptoms occur. Early operation is indicated in hematomyelia. In fracture of the spinal arch early operation is indicated if nerve disturbance can be attributed to the fracture. In fracture-dislocation it may be useful. In gunshot injuries if the bullet can be seen by the radiography to be in the vertebral canal, operation is indicated. Treatment of injury of the cauda differs radically from that of the cord proper. In injuries below the twelfth dorsal vertebra the cord should be exposed and sutured. Resection of the lumbosacral roots in severe spastic paralysis should relieve spastic symptoms. Abbe and Forster have operated successfully. Section of the posterior nerve roots has been done for tabetic pains.—(*Ibid.*)

Book Notices.

Modern Treatment: The Management of Disease with Medicinal and Non-Medicinal Remedies. By Eminent American and English Authorities. Edited by HOBART AMORY HARE, M. D., Professor of Therapeutics and Materia Medica, Jefferson Medical College, Philadelphia; Physician to the Jefferson Hospital; etc.; assisted by H. R. M. LANDIS, M. D., Medical Director to the Phipps Institute for Tuberculosis and Physician to the White Haven Sanatorium. In two very handsome octavo volumes, comprising 1,800 pages,

with numerous engravings and full page plates. Price per volume in cloth, \$6.00, net; half morocco, \$7.50, net. Lea & Febiger, Publishers, Philadelphia and New York, 1911.

The first volume begins—Part I—with general considerations on modern pharmacology and its bearing on practical therapeutics, the combination of drugs and prescription writing, as well as a most useful chapter on the untoward effects of drugs. Then comes Part II with practically 400 pages given over to treatment of disease by non-medicinal measures. This section deals with climate, exercise, mineral springs, hydrotherapy, electrotherapeutics, x-rays and radio-active substances, rest cure, nutrition and foods, hygienic measures—individual, communal, and national—management of epidemics, and disinfection. We likewise find in this section about 100 pages devoted to serum, opsonins and vaccine, glandular therapy, and tuberculin as a therapeutic and diagnostic agent. Part III concludes the volume with a full consideration of treatment of the various infectious diseases.

Volume two covers the treatment of parasitic infections—malaria, trypanosomiasis and kala azar, uncinariasis and helminthiasis, syphilis and the dysenteries—diseases of the circulatory system, the digestive system and allied organs, as also respiratory diseases, those of nutrition and the diatheses, of the nervous system, the genito-urinary apparatus—including local and general treatment of diseases of the female pelvic organs—the skin, the eye, and the ear.

Just as there is no perfect being, just so there is no perfect book on medical treatment—nor can there be. There is, however, sufficient justification for the claim that the whole field of present-day practical medicine—as indicated in the above brief outline of contents—is covered in a most authoritative manner, the pith and essence of modern therapeutics being presented in a form for ready reference.

Necessarily some of the subjects considered overlap each other, and it is interesting to note in instances the varying values placed on certain measures as remedial agents by different authors equally eminent—as, for instance, the worth of serum in tuberculosis—so that important new treatments of the day are impartially reviewed from different view-points. Thus may the necessity be emphasized for

carefully weighing a given method before a too ready acceptance or rejection for all cases.

These two books will serve for standard reference, and will prove a valuable addition to any medical library, however large or small.

Bismuth Paste in Chronic Suppurations—Its Diagnostic Importance and Therapeutic Value. By EMIL G. BECK, M. D., Surgeon to the North Chicago Hospital. With an introduction by CARL BECK, M. D., and a Chapter on the Application of Bismuth Paste in the Treatment of Chronic Suppuration of the Nasal Accessory Sinuses and the Ear, by JOSEPH C. BECK, M. D. With eighty-one engravings, nine diagrammatic illustrations, and a colored plate. St. Louis, C. V. Mosby Co. 1910. Cloth. 8vo. 237 pages. Price \$2.50.

This is an intensely interesting—and no less convincing—monograph, which tells of the great value of bismuth paste, not alone for its diagnostic purposes in outlining fistulous tracts with x-ray, but more especially as a *curative* agent over a wide range of chronic sinuous suppurations. Dr. Beck discovered his method of treating such conditions quite accidentally while experimenting for a vehicle for bismuth which would allow liquefaction sufficient for the injected substance to enter the smallest crevices of a fistula, then become solid until a picture could be taken, after which it was desired it should come out again. The first case tried with heated vaseline gave a splendid picture, but “When the injected mass failed to return, causing us to fear that we had stopped up the sinus and possibly infected the medullary canal, we felt great anxiety. When we observed, however, that, instead of fever and sepsis, a drying-up and closure of the sinus followed, we were at first surprised, and then we began to experiment systematically on other cases.”

Bismuth paste—easy to prepare and simple in the technique of its administration, as fully described—offers much of hope to an afflicted and despairing class, and we bespeak for this book the consideration it deserves.

The Practice of Surgery. BY JAMES G. MUMFORD, M. D., Instructor in Surgery in the Harvard Medical School. 8vo. 1015 pages, with 682 illustrations. Philadelphia and London: W. B. Saunders Co., 1910. Cloth, \$7 net; half Morocco, \$8.50 net.

The author's effort has been to present especially the clinical side of surgery as he has seen it in an active hospital and private practice

for a score of years. To this end, he has more at length dealt with conditions of common occurrence, while troubles infrequently met with are mentioned but briefly. The book does not attempt a comprehensive discussion of all branches of surgery, nor does principles of surgery receive consideration except incidentally. There are a large number of good illustrations which materially add to the value of the book. Altogether, we think Mumford's Practice of Surgery will prove a useful addition to any medical library.

Editorial.

The Antiformin Method of Demonstrating Tubercle Bacilli.

Judging from the uniformly favorable character of results reported in literature of late, we have in the "antiformin method" a valuable concentration process for identifying tubercle bacilli. It is well known that careful search by commonly used methods often fails to reveal the presence of tubercle bacilli in sputum as well as in purulent exudates, and other body fluids in cases known to be tuberculosis; therefore, any method reducing materially this percentage of error should be welcomed.

Antiformin, a proprietary preparation introduced by Uhlenhuth, is probably a mixture of Javelle water and sodium hydroxide. The technique of the method is simple, requiring only a high speed centrifuge giving 3,000 revolutions per minute. Various modifications have been used, but the following is the method usually employed for the examination of sputum. A convenient quantity of sputum is mixed with a twenty to forty per cent. solution of antiformin. Stirring a few moments with a sterile glass rod produces complete solution of all organic matter and a uniform fluid is obtained. This is centrifugalized for 15 minutes, a very small amount of sediment being obtained. The supernatant fluid is poured off and replaced by normal salt solution. The tube is now well shaken and again centrifugalized for 15 minutes. The sediment thus obtained is transferred with a pipette to a well cleaned glass slide and evaporated to dryness, either by placing in a thermostat at

50° C., or by drying slowly over a small flame. The film is then fixed and stained as usual by the Ziehl-Neelsen method. Care must be used in washing the film as the tendency is to detach it from the slide, and the stream of water should therefore not be allowed to play upon the specimen, but the latter immersed. The use of egg albumin will also aid in attaching the film.

By this process practically all of the tubercle bacilli in the sputum employed will be concentrated in the one preparation, and it has been found possible by many who have used the method to demonstrate the organisms in specimens of sputum in which examination by the usual method gave negative results. The method is also applicable to pus, urine, feces and even to pieces of tissue. Minute pieces of the latter, such as gland tissue are put into a 30 to 50 per cent. solution of antiformin and placed in an incubator at 37.5° C. for 24 hours, shaking from time to time, and then treated as already described.

Antiformin has the power of quickly dissolving organic matter and destroys the bodies of all bacteria except those of the acid-fast group. These seem to be unharmed and cultures can be readily obtained from the sediment by incubation upon suitable media. Guinea-pigs may be likewise inoculated without the usual danger of secondary infection.

It can be readily seen that this method promises to be one of great clinical value.

J. C. FLIPPIN, M.D.,
University of Virginia.

The Association of Medical Officers of the Army and Navy of the Confederacy.

Will convene for its fourteenth annual meeting during the re-union of the United Confederate Veterans at Little Rock, Ark., May 16-18. Dr. Edwin D. Newton, of Atlanta, Ga., will preside.

In addition to the social features to be enjoyed, the principal object of the Association is to replace as far as possible, by written or verbal contributions of its members, the medico-surgical history of the Confederacy, which was destroyed by fire just before the close of the War. All men who served the Confederacy in any medical capacity, and Confederate Veterans or their sons, who are regular doctors of medicine, are eligible to membership. Further

information may be obtained of the Secretary, Dr. A. A. Lyon, of Nashville, Tenn., or of Dr. Frank Vinsonhaler, Chairman Committee of Arrangements, 113 East Capitol Avenue, Little Rock, Ark.

Dr. R. M. Slaughter Resigns Treasurership of Medical Society of Virginia.

We regret to announce that Dr. Slaughter, who has so well and faithfully served the Medical Society of Virginia as its treasurer since 1903, has felt compelled to tender his resignation on account of continued bad health. He will spend some time in traveling and taking a much needed rest, and we hope will soon be fully restored to his former health. The Executive Council of the Society will meet on the twenty-sixth of this month to elect a successor to fill Dr. Slaughter's unexpired term.

The Shenandoah Valley Medical Society,

Of which Dr. D. D. Carter, of Woodstock, is president and Dr. Walter Cox, of Winchester, secretary-treasurer, will hold its next quarterly meeting at Winchester in May. Though in its infancy, this society is doing good work, and with the territory it covers should become one of the prominent local societies of the State.

Catawba Sanatorium to Accommodate Larger Number of Consumptives.

Arrangements have recently been perfected by which it is hoped the Sanatorium will hereafter be able more promptly to receive those applying for admission. It is urged upon prospective patients that they send in their applications promptly upon the advice of their physicians, instead of waiting to hear of the vacancies which are constantly occurring.

The new resident physician and assistant physician, Drs. Jennings and Lloyd, are having much success with their work.

North Carolina School for the Feeble-Minded.

Provision was made by the recent Legislature of North Carolina for the establishment of a school for the feeble-minded, and a committee of doctors has been appointed to visit similar institutions in other States, and report with recommendations as to the North Carolina institution.

The State Board of Health of Florida,

Under the direction of Dr. Hiram Byrd,

Assistant State Health Officer, has recently issued an interesting handbook of information for all interested in Hookworm Disease. Beginning with a description of the parasite causing this disease, which seems at present the *bête noire* of the Southern States, the pamphlet thoroughly covers the subject. A number of illustrations and an extensive bibliography add much to the attractiveness of this treatise.

Public Health and Marine-Hospital Service Examinations.

The Surgeon-General announces an examination in Washington, D. C., May 22, 1911, of candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service. Candidates must be between twenty-two and thirty years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character. Assistant surgeons receive \$1,600 a year, with increase in salary upon promotions.

Memorial Hospital, Richmond, Va.

The fiscal year of Memorial Hospital ended on March 1st, 1911. The report of the secretary showed that there were more pay cases admitted during the year just ended, than in any previous year and the income from the patients exceeded that of last year by five thousand dollars. Many representative women of Richmond have organized a volunteer auxiliary, which renders valuable aid to the children's ward. The expenses of the hospital for last year were \$72,894.54 and the sum collected from patients was \$64,699.22. The deficit was fully covered by endowments and subscriptions from various sources.

The American Proctologic Society

Will hold its thirteenth annual meeting at Los Angeles, California, June 26-27, with headquarters at the Hotel Alexandria. Dr. Geo. J. Cook, Indianapolis, Ind., will preside. The program, which should prove most interesting, includes a symposium of eight papers on Constipation.

Dr. William H. Welch Honored.

Dr. Welch, professor of pathology Johns Hopkins University, Baltimore, is the recipient of the crown order of the second class from the Kaiser, in recognition of his services in

propagating German medical science in the United States, and for spreading the use of the German language in the medical schools in this country. The German Ambassador at Washington will deliver the order into the doctor's hands.

New Science Building.

Messrs. Eli Lilly & Co., Indianapolis, announce that their new Science Building, in course of construction, will be ready for occupancy about the first of June. These laboratories will be modern in every detail and fully equipped for research work. The building will include a scientific library of several thousand volumes and a lecture room capable of accommodating two hundred people, in which the salesmen and department heads may witness demonstrations and be informed as to the products manufactured by this company. This hall is also to be available to local scientific societies, etc.

Obituary Record.

Dr. Richard Thomas Styll,

For many years prominently identified with medical interests in this State, died at his home in Newport News, Va., April 10th, after a long illness, from a complication of diseases.

He was born in Henrico county, Va., December 18, 1853. After an academic education at Strother's and Norwood's Academy, Richmond, he took up the study of pharmacy and medicine at the Medical College of Virginia, graduating in 1877. He became a member of the Medical Society of Virginia in 1878, and several years later was elected its treasurer, which position he held for twenty years, until 1903, at which time he became an Honorary Member of the Society. At the last meeting of the Society, Dr. Styll was appointed to read the paper on Treatment of Typhoid Fever. in the Subject for General Discussion at the coming session in Richmond. Among other places of honor filled by Dr. Styll was the position as physician-in-charge of Pinel Hospital, Richmond; resident physician, Hollins Institute, Va.; first assistant physician, Central State Hospital, Petersburg, and delegate to the British Medical Association in 1906. He married Miss Elgin Denton, of Henrico County, Va., who survives him.

The interment was made in Hollywood Cemetery, Richmond.

Dr. Hiram Harrison Miller,

One of the best-beloved and most highly-respected physicians of Rockingham County, died at his home in Elkton, Va., April the 10th. Though not in good health for the past two months, he was active in his work to the time of his death, having just returned from a professional call, when he was stricken with paralysis, from which he died in a few hours.

He was born near Elkton, July 11, 1839, and received his early education at South River and New Market academies. He studied medicine at the Medical College of Virginia, from which he graduated in 1861. Dr. Miller served with distinction throughout the Civil War as a volunteer in Company I, Tenth Virginia Regiment. For about thirty years he practised his profession in Missouri, where he was twice married, his second wife surviving him. He returned to Virginia in 1900, and became a member of the Medical Society of Virginia in 1903. He was also a Mason, being a member of Elkton Lodge, No. 74, and was buried with Masonic honors.

Resolutions on the Death of Dr. A. G. Hoen.

The following resolutions were adopted at a meeting of the Richmond Academy of Medicine and Surgery held on March 31, 1911:

Inasmuch as Divine Providence has seen fit to remove from our midst our fellow member, Dr. A. G. Hoen, be it resolved by the Richmond Academy of Medicine and Surgery—

First, That in the death of Dr. Hoen the Academy feels the loss of a member whose trained mind, specialized attainments, absorption in his studies and devotion to his work gave us during his life time a field for wondering admiration; one whose gentleness, patience, kind and sympathetic nature and willingness to place his knowledge at the service of all could only be appreciated by his most intimate associates.

Second, That we extend to his family our deep sympathy in their bereavement.

Third, That these resolutions be published in the daily press, be sent to his family and be spread upon the minutes of the Academy.

MARK W. PEYSER, M. D.,

Secretary.

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Original Communications.

HAEMATOCELE—STUDIED WITH REFERENCE TO AETIOLOGY, PATHOGENESIS AND THERAPEUTICS, CHIEFLY.*

By GEORGE TUCKER HARRISON, M. A., M. D., New York, N. Y.

Honorary Member Medical Society of Virginia, Consulting Surgeon to the Woman's Hospital, Consulting Obstetrician to the Nursery and Child's Hospital, Consulting Gynecologist to the Misericordia Hospital, and Surgeon to St. Elizabeth's Hospital.

About a year after Dr. Landon B. Edwards had begun the publication of his most excellent journal, I contributed to it, at his request, an article—quite an exhaustive paper upon Retro-Uterine Hæmatocele. Since that time this subject has been so illuminated in consequence of the great development of abdominal surgery and the accurate manner in which microscopical examinations have been made of specimens thus obtained, that views formerly entertained, as resting on a firm basis, must now be abandoned, especially in regard to treatment. I have no apology to make for the radical change which my own opinions have undergone, for as Cicero has truly said—*nemo doctus unquam mutationem consilii inconstantiam dixit esse*—“No one possessed of knowledge ever said that change of mind was inconsistency.”

What is hæmatocele? It is a pathological condition clearly defined in its clinical features and from the point of view of pathological anatomy. It may be defined as an intra-peritonæal effusion of blood into the pelvis of a woman which has the tendency to become encapsulated towards the free abdominal cavity by the formation of adhesions, or is already encapsulated. Hæmatocele must be strictly differentiated from hæmatoma, which is extra-peritonæal and has its seat in the pelvic connective tissue. It is of importance to bear in mind

the classification of Sängér and distinguish between—(1) the diffuse hæmatocele; and (2) the solitary hæmatocele which has the appearance of a tumor. Schauta called the diffuse hæmatocele, *primary*; the solitary, *secondary*.

The diffuse hæmatocele constitutes a tumor situated in the pelvis whose boundaries cannot be accurately defined, that may, to the left or right, extend to the pelvic wall and which above is segregated from the free abdominal cavity by loops of the small intestines adherent together and to the blood accumulation. The blood clots are pervaded by membranes in the form of adhesions.

The solitary hæmatocele, on the contrary, constitutes a tumor well defined on all sides which projects with its upper convexity into the abdominal cavity. This well-defined tumor originates from the fact that it possesses a more or less thick capsule of its own, completely investing it, which may have extensive adhesions with the parietal peritonæum and intestines, but which as a whole may be shelled out like a tumor—as a myoma, for example. This capsule is nothing but the external layer of the blood effusion which at first consists of fibrin, but is gradually organized into connective tissue.

Modern investigations have especially clarified our vision with respect to ætiology. It may be accepted now as a demonstrated fact that the vast and preponderating majority of hæmatoceles owe their origin to ectopic gestation. Fritsch declares that he has never seen a case of hæmatocele in which an extrauterine pregnancy could be absolutely excluded. Striking is the statement of Schauta, that he has only observed hæmatocele in tubal abortion. In the case of rupture of the pregnant tube, or as Werth terms it, “external foetal capsular rupture,” the hæmorrhage is so severe, as a rule, that the entire abdominal cavity is deluged with blood, and the patient dies from the loss of blood unless her life is saved by operative

*Read before the forty-first annual meeting of the Medical Society of Virginia, at Norfolk, October 25-28, 1910.

intervention. There have been observed, however, cases in which even after rupture of the tube, the hæmorrhage was so inconsiderable that hæmatocele formed. Trustworthy observations place this beyond question.

Conditions most favorable for the development of hæmatocele are found, however, in tubal abortion, internal foetal capsular rupture of Werth, forming usually the typical retro-uterine hæmatocele of Nelaton. Fromme states that of 87 cases of certain tubal abortion, 61 exhibited a more or less large hæmatocele formation. Doederlein could refer all the cases of hæmatocele he saw in 1898 to tubal abortion, amounting to twenty-seven.

Of other causes of significance in the formation of an hæmatocele, *trauma* is the most important. The trauma may be of various kinds and the hæmorrhage may proceed from ruptured vessels of the broad ligament, the ovary or tubes. I have seen an hæmatocele that owed its origin to the forcible efforts to replace a retroflexed uterus, bound down by adhesions, the hæmorrhage coming from the vessels of the torn membranes. The cases of Kober and Schambacher, in each of which a laparotomy was performed and the extirpated tube in the latter's case carefully examined by the microscope, would seem to prove that cohabitation traumata were responsible for the origin of the hæmatoceles respectively. In a certain number of cases *chronic hæmorrhagic salpingitis* may give rise to hæmatocele. Fromme is certainly right when he insists that in these cases of hæmatocele due to hæmatosalpin, careful microscopical examination must be made before a possible extrauterine pregnancy is excluded. It is certainly an extreme rarity when hæmatocele owes its origin to ovarian disease.

In the former days *pelviperitonitis hæmorrhagica* played a conspicuous role in the ætiology, fortified as it was by the great name of Virchow. The view held by this eminent pathologist, that here the same relations obtained as in *pachymeningitis hæmorrhagica*, while not to be altogether rejected may rarely be invoked to explain the origin of this affection. Sauter as a result of his investigations in Chiaris' Pathological Anatomical Institute, maintains that all diseases that lead to a general venous stasis, as valvular lesions of the heart, emphysema of the lungs, etc., may give rise to effusions of blood in the peritoneal cavity. He found in 14 corpses of women in whom a

mechanical hyperæmia could be shown, not less than seven times, hæmorrhages in Douglas' cul-de-sac with their consequences. It is hardly necessary to dwell upon the fact that malignant new formations may occasionally, when affecting the uterus, tubes or ovaries, give rise to hæmatocele.

Notwithstanding the fact that all these possibilities just enumerated may be ætiological factors, still the proposition enunciated above is irrefragable that *hæmatocele, as a rule, is consequent upon extrauterine pregnancy, and, to be more explicit, indicates tubal abortion.*

It is especially in the study of pathogenesis and pathological anatomy that recent investigations have been fruitful. The mode of origin of the hæmatocele has been most accurately studied in pure tubal abortion. When a tubal abortion takes place, more or less blood escapes from the abdominal end of the tube and the position and size of the blood effusion will depend on the situation of the abdominal end of the tube and on the quantity of the discharged blood, which usually escapes in recurrent attacks. It must be borne in mind that the abdominal end of the tube is directed towards the bottom of Douglas' pouch and lies laterally and hence an obvious explanation of the site of the hæmatocele and want of symmetry.

Aschoff and Ulesko-Stroganoff have shown that in tubal abortion, not infrequently, external wounds in the wall of the implantation of the ovum were found by them, constituting the so-called concealed ruptures. There are often only punctiform perforations that are concealed by blood-coagula deposited on the tube-wall externally and again closed. These deposited blood-coagula, often very small, may, on the recurrence of a hæmorrhage in consequence of a renewed external foetal capsular rupture, become the source of origin of an hæmatocele in spite of a simultaneous tubal abortion.

What is the mechanism, we may ask now, by which the coagulated blood is segregated from the general peritoneal cavity? The small intestines as well as the appendices epiploicæ, and especially the omentum, become adherent to the upper layer of the blood effusion and encapsulate it towards the free abdominal cavity. These constituent parts, joined together by adhesions, form the roof of the hæmatocele.

Any surgeon who has had experience in the performance of laparotomy for these cases must have observed that, in opening the abdominal

cavity, the blood extravasation and the pelvic organs were not visible. Old clots of blood are rarely found between the loops of the intestines—only when recurrent attacks of hæmorrhage have occurred and parts of the intestinal adhesions have been torn. In these cases of secondary hæmorrhage, when the covering roof has broken through, the patient may die from the loss of blood. After loosening the omentum from the bladder and uterus, the operator comes upon the intestinal loops forming the roof of the hæmatocele, and on separation of the adhesions, he carefully exposes the hæmatocele. The formation of adhesions is not limited to the surrounding small intestines, the omentum, peritonæum, etc., but the blood accumulation itself is pervaded by membranes in the form of septa.

With reference to the genesis of the two forms of hæmatocele, *diffuse and solitary*, Werth, who is so supreme in this field that his views may well challenge attention, regards the origin of the solitary hæmatocele as due to the long delayed absorption. Accordingly, every hæmatocele is at first diffuse, and consequently, primarily, small intestines and omentum become adherent to the surface of the blood effusion and shut it off from the free abdominal cavity.

What is the cause now, we may ask, of the behavior of the blood in the peritonæal cavity as has just been described? Fritsch observed that when he introduced into the abdominal cavity of rabbits defibrinated blood, that after the lapse of thirty-six hours there were scarcely any remains of the blood discoverable in the abdominal cavity. This observation has been confirmed more recently by a number of excellent observers. There must be, therefore, some reason, by no means obvious, why the blood in the formation of an hæmatocele is not immediately removed by absorption.

In a paper of mine to be found in the *Transactions of the American Gynecological Society*, as well as in the article above referred to, I subscribed to the explanation of Schroeder, which seemed then to be logical and conclusive. Schroeder maintained that, primarily, in the pelvis, perimetric cords and adhesions exist, which formed chambers and compartments, shutting off Douglas' cavity above, and that in these compartments and chambers the blood remains, and thus the hæmatocele forms. This explanation is no longer tenable, as the ad-

hesions and connective tissue formations are secondary, consequent upon the effusion of the blood, and usually cannot have been present primarily.

Skutsch has recently studied this question from the point of view of experiment. As a result, it became evident that it is absolutely impossible to generate in animals intraperitonæal blood tumors which correspond to hæmatocele in their distinctive features. The blood did not accumulate in the pelvis following the law of gravity, but was found distributed between the coils of the intestine and was very quickly absorbed. In man a further factor must be added which cannot be imitated in the animal, or has not heretofore been imitated.

The experimental and microscopical studies of Busse have thrown much light upon this difficult problem. Busse lays stress upon the point that in intraperitonæal effusions two conditions must be fulfilled for the occurrence of absorption: *first*, that the fluid is susceptible of absorption; *second*, that the peritonæum is capable of absorption. That fluid blood, even in large quantities, is absorbed from the peritonæal cavity is proven both by clinical experience and animal experiments. The inference, therefore, is logical that for the occurrence of the hæmatocele either the blood does not enter the abdominal cavity in a fluid condition, or that the peritonæum in the places in which it comes in contact with the blood is not capable of absorption. Werth does not believe that the blood is discharged in an already coagulated condition. He believes that the power of absorption of the pelvic peritonæum, even under physiological conditions, is not as favorable as the upper portions of the abdominal cavity. In the latter case, by peristalsis of the intestines and by the movements of the diaphragm, provision is amply made for the fine distribution of the fluid to be absorbed and for the absorption to be made accessible. On the contrary, in the Douglas' space no such favorable conditions obtain, and there is no obstacle in the way of coagulation of the effused blood. Busse, on the other hand, maintains that for the occurrence of hæmatocele two factors are co-operative. In the first place, the blood is discharged into the Douglas' excavation either already coagulated or blended with foreign ingredients, and, secondly, the incapacity of the pelvic peritonæum to effect absorption in consequence of different pathological processes. As circumstances in-

hibiting absorption, he regards acute and chronic inflammations of the pelvic peritonæum and general conditions of stasis in it, as, for example, in stases in the portal circulation.

The researches of Schauta, Opitz and others have shown conclusively that in the ætiology of tubal pregnancy chronic gonorrhœa is the potent factor. In the majority of cases of tubal pregnancy traces of a preceding salpingitis are demonstrable, and, as a consequence, there is more or less inflammation of the pelvic peritonæum. The researches of Opitz have especially thrown light upon the ætiology of hæmatocele. As he has shown in many cases of salpingitis, germs of all possible kinds will be found in the tube, which have ascended with the gonococci; they were there when the tubal pregnancy occurred. Not only the tube and surrounding pelvic peritonæum become the seat of chronic inflammation, but also new germs escape from the tube, when tubal abortion takes place, that must leave behind in the peritonæum new traces of their presence.

The experimental studies of Fromme are very suggestive. He has shown that extensive adhesions may be called forth in the abdominal cavity of rabbits when infected blood is introduced into it. The germs should not be very virulent, otherwise the animals die of peritonitis, but the germs should be such as flourish on perishing material—the so-called saprophytes. The blood, impregnated with saprophytes or germs weakened in their virulence, escapes now also in tubal abortion into the abdominal cavity; the peritonæum reacts upon the germs by the formation of adhesions, and by that means the sound portion of the abdominal cavity is closed off from the part which is the seat of chronic inflammation. In this way Fromme would explain the occurrence of the intestinal adhesions in hæmatocele and the formation of the hæmatocele capsule. The experimental investigations of Busse confirm this view.

The conditions that must be fulfilled in order that the formation of hæmatocele may take place are rarely present in other cases than in ectopic gestation, and therefore, *it*, and especially its consequence, *tubal abortion*, may be affirmed to be the principal cause of the formation of hæmatocele.

The differential diagnosis is a matter of paramount importance, for although usually the history, symptoms and results of objective examination furnish a clinical picture which is

demonstrative, yet we now and then meet cases in which it is exceedingly difficult to come to a decision.

One condition that simulates hæmatocele is that presented by *retroflexion of the pregnant uterus*. There is a certain amount of agreement in the history of the two, respectively, the period has been absent, irregular hæmorrhages may have appeared, while labor-like pains, annoyances in urination and pressure in the rectum may alike exist. But in *hæmatocele* the menses have been absent only once or twice usually, until irregular hæmorrhages appeared, while in *retroflexion of the pregnant uterus* amenorrhœa had existed for three months before the appearance of the phenomena annoying the patient; these usually have reference to the bladder. The results, however, of bimanual palpation hardly ever leave us in the lurch. This should only be undertaken after evacuation of the bladder. In *retro-uterine hæmatocele* it will be found, accordingly, that the fundus uteri, which is scarcely enlarged, is shoved forward behind the symphysis and may be differentiated from the hæmatocele lying behind. A further point of significance is that in hæmatocele the adnexa may be felt on the anteposed uterus on each side, high up on the abdominal wall; in *retroflexion of the pregnant uterus*, if felt at all, they will be found deep in the pelvis. The gravid uterus is round, smooth on all sides, convex on the fundus, felt from the rectum, fills out the pelvic space, and is movable from the fornix vaginae, while in hæmatocele the contours above are rougher, the boundaries not so exactly defined, and is not movable from the posterior fornix vaginae.

I may remark, in passing, that in the differential diagnosis between pyosalpinx and hæmatocele the blood count furnishes valuable aid. A very important question in differential diagnosis is whether, in a given case, we have before us an hæmatocele with completed abortion or an hæmatocele with incompleted abortion, or even pregnancy still continuing. All authorities are agreed in this, that the discharge of the uterine decidua is no certain sign of the death of the fetus. The uterine hæmorrhages are not absolutely demonstrative. The consistence of the uterus deserves more regard. In tubal pregnancy with the ovum still living, the uterus is soft, it is enlarged, while in tubal pregnancy which has come to an end it feels harder. The *treatment* of hæmatocele has undergone a radical

change in recent years in conformity with the increase in our knowledge of its significance.

Formerly I held to the expectant plan of treatment, but now believe that the expectant therapy must be limited to only a few cases, and that the proper method of approach is through the abdominal wall for the radical cure of the disease.

For the expectant plan of treatment are suitable only the cases in which the hæmatoceles are small or of medium size, and which cause no fever; also, for those in which we may be sure that the ovum has been completely expelled from the tube. For those cases in which remnants of the ovum may be assumed to be still in the tube, it is just as rational to leave them to the resources of nature as it would be in the case of uterine abortion in which similar conditions obtained.

The radical operation consists in the removal of the pregnant tube which has caused the hæmatocele—that is the rule. The cases that demand laparotomy are—here we follow Fromme—(1) Cases in which rupture of the tube or tubal abortion with severe hæmorrhage have caused the hæmatocele and recurrence of the hæmorrhage might be fatal. (2) Cases in which the hæmatocele has been of long standing and on account of its size causes unbearable symptoms of pressure. (3) Hæmatocele in which, in consequence of incomplete expulsion of the ovum out of the tube, recurrent attacks of hæmorrhage ensue, either into the sac of the hæmatocele or into the free abdominal cavity. (4) All hæmatoceles in which the expectant plan conscientiously carried out has not proven successful. (5) Cicatricial bands and adhesions left after the absorption of the hæmatoceles and which cause severe annoyance to the patient.

The advantages of laparotomy are that we have a good survey of the field of operation, and the control of hæmorrhage is perfect. Above all, we are able to employ conservatism. We remove only what is diseased. After loosening the intestinal and omental adhesions and ligation of any bleeding blood vessels, the pregnant tube is exposed, clamped, as also the corresponding ovary, and the pedicle ligated. Time should not be wasted in looking after fluid or coagulated blood in the abdominal cavity or peeling off pieces of hæmatocele membrane from the walls of the intestines. Success depends chiefly on strict asepsis, rapidity in the performance

of the operation, and perfect control of the hæmorrhage.

Of course, when infection of the hæmatocele takes place, as shown by high fever which persists, posterior colpotomy is indicated with drainage. The radical operation in these cases is necessarily excluded, as, if we break through the roof above, shutting off the hæmatocele from the remainder of the abdominal cavity, the patient must necessarily die of septic infection.

After the vaginal incision, instead of a rubber tube, I prefer a tampon of iodoform gauze, which may remain four or five days before removal—as fever and decomposition are not so likely to occur. The injection of iodine, according to Fromme, favors the shrinking of the sac.

While many gynæcologists still use the vaginal route for the performance of the radical operation and obtain good results, the advantages of the abdominal route are so many and so obvious that it will be preferred by most gynæcologists in the future.

In conclusion, I would request that members of the Society would bear in mind that I only touch upon questions that might be largely expanded, as my paper is intended to be suggestive rather than exhaustive.

132 West Seventieth Street.

THE PREVALENCE AND PREVENTION OF HOOKWORM DISEASE IN VIRGINIA.*

By ALLEN W. FREEMAN, M. D., Richmond, Va.
Assistant State Health Commissioner.

The recognition of hookworm disease as one of the widely prevalent diseases in certain parts of the United States constitutes one of the most important, and certainly one of the most striking, sanitary advances of the present generation. To say that it is the sole explanation of the backward economic condition of certain parts of our common country is, of course, to depart from the facts in the case. At the same time it must be admitted that the disease offers a reasonable explanation for certain facts, otherwise inexplicable, that have long been known to all physicians of the Southern States. The physical condition of certain classes of our population, after malaria had been disposed of as the causative factor, could be accounted for in no other way than as a result of the rapid and spontaneous degenera-

*Read before the forty-first annual meeting of the Medical Society of Virginia, at Norfolk, October 25-28, 1910.

tion of a stock originally of the best and hardiest type, until it was demonstrated that these people suffered from a disease whose recognized effects accounted for all of their symptoms.

The first effect of the announcement of the discovery of this disease in the South, coming as it did without general knowledge on the part of the people that the disease prevailed in other advanced and civilized countries, was one of sensitiveness and even of resentment on the part of the Southern people. They felt, and still feel to a certain extent, that the presence of the disease is an affliction peculiar to them, and, in a certain measure, a disgrace. This feeling has been heightened by the knowledge that the disease is spread through insanitary habits of life.

With wider and more accurate knowledge regarding the disease on the part of the people, and particularly on the part of the physicians, there has come a marked change in the feeling regarding the matter. We now know that hookworm disease, instead of being a disease peculiar to ourselves, prevails in practically all of the most important countries of Europe. We know that Germany has for years waged an active campaign against the disease, expending for the current year a sum equal to \$400,000 in the work of its eradication, and that France, Italy, Switzerland and even England are recognizing its existence and importance and are actively combating it. We have come to see, in addition, that our sanitary habits are for the most part those of the rural population of the Eastern part of the United States, those of the English settlers coming from a Northern country with the sanitary habit evolved from life in such a climate, and that the spread of the disease has been due to the added factors of a warm climate and the necessarily close sanitary association with the negro, the probable importer of the infection. There is no more disgrace to be attached to the spread of hookworm disease under such conditions, with the utterly inadequate sanitary knowledge of the times, than could be credited to a Northern race settling in Cuba or Central America and contracting yellow fever before the work of Reed and Carroll.

We have come, therefore, to recognize that in hookworm disease we face not an accusation, but a condition, not a disgrace but an opportu-

nity. With this recognition of conditions has come the responsibility for their correction. Had we the condition and no remedy our plight would be pitiable, but having the condition and the remedy our plight will be not pitiable, but contemptible, should we fail to remove the condition. We must face the condition and apply ourselves earnestly and honestly to the eradication of this physical burden and obstacle to our progress.

PREVALENCE OF HOOKWORM IN VIRGINIA.

We have known for several years that scattered cases could be found in the State. One of the first cases discovered in the United States was reported by two members of this Society. Dr. Stiles' first specimen came from Virginia, and at Virgilina he found the first cases on his epoch-making trip.

Prior to August, 1909, however, no one thought the disease to be widely prevalent in the State. At that time a letter was received by the State Health Department from a gentleman, a resident of Bedford County, describing certain cases said to be common in his locality, and which he thought conformed to the description of cases of hookworm which the writer had read, and stating that specimens from several of the cases had been submitted to Dr. Stiles and pronounced to be hookworm. One of the student investigators of the Department was sent to the County and reported that in certain localities in the district a large per cent. of the population were suffering from the disease. This was the first intimation that there was in the State a heavy infection with the disease, corresponding to conditions found in the States further South. About the same time reports were received from Henry County, from the Northern Neck counties and from scattered localities in Southside Virginia. When hookworm was added to the list of diseases of which report is requested from the physicians it became apparent that in a majority of the counties of the State cases were being found and treated by physicians.

As soon as work was commenced under the auspices of the Rockefeller Sanitary Commission an attempt was made to systematically cover the State in a reconnaissance survey to determine the extent of the infection. In this work 96 of the 100 counties of the State have been visited or reported on, and a greater or

less infection has been found in 81. In this survey no attempt was made to estimate the percentage of infection, the information available not being sufficient to furnish a basis for even an approximation. The Tidewater section of the State has been found to be heavily infected in practically its whole extent. The counties of the Southside from the ocean to the Blue Ridge Mountains are infected, some very heavily. In others the infection is rather patchy, being heavy in certain districts and rather light in others. The great valley is infected but little, the disease being found in only a few scattered areas. The Western slope of the Blue Ridge Mountains has apparently far less cases than the Eastern slope. In the Alleghany Mountains sufficient work has not been done to accurately define the infection. In some counties, notably Scott, the infection is undoubtedly heavy. The mountain people of the extreme Southwest probably suffer heavily from the disease, though survey work has not yet been completed in this region. In the Piedmont, North of the James River, only slight scattered evidences of the disease have been found.

Although the survey work is far from complete, it would seem from the evidence that there are probably two hundred thousand cases of the disease in the State. The number, counting all light cases, may be far greater than this; it will hardly be less.

In the distribution of the disease, several interesting details have come to light. Investigation in a cotton mill located in Grayson County, and drawing labor from the counties surrounding Grayson, revealed the presence of about forty cases of the disease among the thirteen hundred persons examined and inspected. Upon investigation thirty-eight of these persons were found to be recent immigrants from the counties of North Carolina and Tennessee adjoining the Virginia line, and the two remaining had apparently contracted the disease through contact with these recent comers to the village. With a view to confirming the absence of the disease from Grayson County, further survey work was done in the County. This resulted in finding only seven cases of the disease. These, too, proved to be recent comers from an adjoining county of North Carolina.

Report being received from Washington

County of the existence of the disease, investigation showed the presence of a focus of the disease involving about seven families, among whom there were thirty cases of the disease. Further search of the County failed to show the presence of the disease, and the history of the infected families was obtained. They were found to be mostly settlers from the adjoining county of Scott, and, this lead being followed, Scott County was found to be heavily infected.

In the counties of Halifax and Pittsylvania the infection has been found to be heavy in areas with apparent freedom from the disease in the surrounding areas. In the Eastern portion of the Southside and in the Tidewater section the infection seems to be uniformly heavy. Many persons living under good conditions have been found in these areas to be suffering from the disease.

PREVENTION OF THE DISEASE.

The problem, which has been outlined above, of finding, diagnosing and securing the treatment of these two hundred thousand cases of the disease, is large enough, but it seems small compared with the problem of preventing further spread of infection and the reinfection of treated cases. The real heart of the problem before us lies in the necessity for a change in the sanitary habits of our people. We must recognize the fact that we live in a country whose climate, together with the presence within its borders of a large negro population, brings it within the class of the sub-tropical countries, and that our sanitary habits and organization must be made to conform to these conditions.

At first glance, this work would seem to be so large as to be impossible of accomplishment, but when we take stock of the means available for its accomplishment it seems not only possible but entirely practicable. The work of survey for the purpose of outlining the areas of infection and the proper percentage of infected cases in each district is being carried on rapidly by the State Health Department through its district inspectors. This work will be extended, and, at the present rate of progress the State will be covered in about three years. In addition to the survey work, the district inspectors are conducting a widespread campaign of publicity by means of lectures, newspapers, literature and individual visits, and are diagnosing and sending to the physicians for

treatment thousands of cases of the disease. Public sentiment regarding the disease has advanced remarkably wherever this campaign has been carried on, and much has been accomplished in the territory already covered.

The treatment of these cases must rest with the regular medical profession of the State. There is no reason for considering hookworm in this respect as different from any other disease.

RESPONSIBILITY OF THE PHYSICIANS OF THE STATE.

Upon the physicians of the State is laid a heavy responsibility in connection with hookworm disease. As citizens, they share with all loyal Virginians the responsibility for correcting conditions which bring so much of misery, distress and poverty upon our people, but as physicians there rests upon them a still greater responsibility. The physician is the natural teacher of the people regarding all sanitary matters. He is the one man in each community to whom all citizens should look for information and guidance. The physician is the one man in the community who can treat these cases, rich or poor, high or low. A campaign against hookworm disease cannot succeed unless every physician lends his aid.

WHAT PHYSICIANS CAN DO.

While the State Department is endeavoring, as rapidly as the means at its disposal will allow, to outline the prevalence of the disease and to teach the people regarding it, its work stops short at well-defined points, and from these points it must be carried on by the medical profession at large. It is absolutely necessary that the physician should inform himself regarding the disease and its importance, and should support by word and deed the efforts of the Health Department to bring these facts to the attention of the people.

A single physician, who has not taken the trouble to inform himself regarding the disease, may, by his skepticism, hold back the progress of the work in a whole county for many months. Realizing this fact, the Department has uniformly visited the physicians in any given territory before starting a general campaign of publicity, and has endeavored to bring to them the latest accurate information regarding the disease. For the most part this effort has been well received, but it is unfortunately

true that too many physicians have obstinately refused to receive any information regarding the disease, and have then publicly ridiculed the whole question and scoffed at the effort of the public authorities to remedy conditions.

The facts regarding hookworm disease rest upon an exact scientific basis. The diagnoses are easily verified by microscopic means, and the results of treatment are so plain that the wayfaring man, though a fool, may not fail to understand them. The Department has endeavored to avoid any exaggerated statement, sensational report or method of work, and has founded its campaign upon proofs and facts which are easy of demonstration. Any physician who is skeptical about the disease owes it to himself to examine this evidence before going on record as opposing the work.

TREATMENT OF CASES.

As has been stated before, the Department cannot, and will not, undertake to treat any large number of cases of the disease. Its efforts have been confined to treating cases only for the purpose of demonstrating to the practicing physicians the method of treatment and its beneficial result. The practicing physician must treat the cases. The Department has repeatedly sent to each physician the latest literature on the subject of treatment and has demonstrated this treatment through its experienced field agents to every doctor in the territory where detail work has been done. The dangers of thymol have been much exaggerated in the past, and of the thousands of cases treated in the last year in Virginia there has been no single one with a bad result. The remedy is inexpensive, can be supplied by any drug house, and can be prepared by any physician. There is no reason why any physician should not treat the cases which come to him seeking treatment.

The diagnosis can be easily established by sending to the State laboratory a specimen for examination. Containers for this purpose will be distributed in a few weeks, and the total expense of sending a specimen to the laboratory and receiving a report does not exceed five cents. Surely there is no reason for remaining in doubt as to the diagnosis of a case suspected to be hookworm.

The treatment of the indigent is, of course, a serious problem, but we believe that the physicians of the State, recognizing the im-

portance of this disease, the wonderful results from its treatment, and the improved economic condition of cases after treatment, will not allow any case to remain untreated, whether rich or poor.

In a few cases, physicians in territories where detail work has been done have charged exorbitant fees for treating cases, placing the disease in a category by itself, and refusing absolutely to treat those who could not produce the five or ten dollars which they demanded for the prescription. Fortunately, such cases have been far in the minority, and for the most part the physicians of the State have treated the disease gladly and well.

SANITARY EDUCATION.

While a department of health can do much by its literature, by its detail work and lectures, it cannot reach the hundreds and thousands of individual homes to see that they are provided with proper privies.

Upon the individual physicians must depend the practical advice to the individual householder regarding his own place. He sees each man in his district twenty times to the one time that the Department's agent can see him. The individual citizen looks to him for advice and accepts his opinion as final. If this campaign is to be successful, each physician of the State must urge upon each of his patients the necessity for constructing a sanitary privy and maintaining it in such a way as to safeguard the health of those living on the place.

In conclusion, I would bespeak for the agents of the Department the co-operation and support of the physicians of the State. For the patients each man meets in his own practice I need not bespeak a careful diagnosis and a conscientious treatment. In the progress of this work, which means so much in every way to our State, we may, I am sure, count upon the loyal support of every physician to the end that physicians, public officials and people may unite in the work that every case may be treated, that every home may be made sanitary, and that the disease may be made to disappear from our borders within the allotted five years. The Department of Health offers to every physician the full measure of co-operation and renders to them every service in its power, and requests of them their co-operation and assistance, not for itself, but for the common good of all.

THE RELATION OF HOOKWORM TO OTHER DISEASES.*

BY R. L. RAIFORD, M. D., Sedley, Va.
Ex-President Southside Virginia Medical Society.

There is, perhaps, in the annals of medicine no more striking example of the power of habit, and the tendency to follow without question those who have preceded us, than our failure for scores of years to recognize the part played by the hookworm in the category of diseases prevailing in our Southern States.

How often have we not heard the wisest of our profession say, in referring to some little tallow-faced, hide-bound fellow, or some grown-up nervous wreck, "Nothing but a genuine case of typhoid," or something just as bad, "can save that fellow," never stopping once to think that the patient referred to was a victim of hookworm disease, and that it was the long period of starvation, and the drastic course of medicine they were wont to give, and not the attack of typhoid which wrought the change.

As a rule, the busy country doctor, who is most often thrown in contact with these patients, has little time for research work, and so long as he had two such accommodating friends as tuberculosis and malaria, who are willing to bear the burden of all unknown troubles, there was little disposition to hunt for new causes of disease.

It is also undoubtedly true that the comparatively recent use of the microscope and the character of the examination necessary to determine the presence of the parasite, coupled with the disagreeableness of the treatment to so many, has played not an unimportant part in our overlooking the affection until comparatively recent years.

There is no question that hookworm disease *per se*, or complicated with other diseases, is the most common of all of the serious maladies of the South. Reports of the several Boards of Health, and from men in every section of the country, doing work along this line, have established this fact beyond any reasonable doubt.

As regards frequency, some of our most common diseases sink into comparative insignificance when placed side by side with this multi-headed monster. So often it is mistaken for other diseases that its prevalence concerns not only those of us who are located where it is most frequently seen, but the men in the cities

*Read before the forty-first annual meeting of the Medical Society of Virginia, at Norfolk, October 25-28, 1910.

doing reference work as well. I can recall several cases which, after going the rounds of every nearby physician, myself included, were finally advised to try a specialist. Having a comparatively light infection, every doctor they had seen, including one or more specialists, had overlooked the real cause of their trouble, and had been treating symptoms to no avail. A few thymol treatments acted like magic, and these patients are now in normal health. What is true of these cases is true of thousands of others in infected districts, as well as where cases have migrated to non-infected localities. So often have I seen this disease mistaken for or associated with other supposed or real diseases, that I have undertaken the preparation of this paper with the desire that my experiences and observations, together with the discussion they may inspire, may be instrumental in helping others to avoid the common errors which have frequently brought so many of our cases to an unhappy termination.

During the past year, I have kept a fairly accurate record of three hundred and five cases that I have treated. Of this number, 143—103 whites and 40 negroes—were males, and 162—115 whites and 47 negroes—were females. The ages ranged from 14 months in the youngest to 74 years in the oldest. Practically every case gave a history of "ground itch" in childhood; most of the adults not having had any such symptoms since. Forty-eight cases were treated in the beginning of or during an attack of malaria; seven in the beginning of or during typhoid; three during tuberculosis; three during persistent urticaria; one during an attack of diphtheria; one during papular eczema; four during pregnancy; one during the puerperium, and two during convalescence following early abortion.

To be more specific, we may consider the above results a little in detail. Of the cases of double infection of malaria and hookworm, and in which thymol treatment was given late during the attack of malaria, the first patient treated was most typical. The case report is as follows:

E. R., white, male, aged 21. Had chill on July 25th, 27th and 29th. Saw patient for first time during chill on 29th. Temperature registered 104° F. Administered calomel and saline cathartics, and quinine to toleration. Saw patient again on August 1st. No chill had occurred since my first visit, but patient ran a

fairly regular temperature, not going above 102° F., and never quite reaching normal. Diazo and Widal were both negative. Continued to push quinine to tolerance. Patient gave history of typical hookworm disease during childhood, but had partially outlived the infection. I had never given a treatment under such circumstances, and was afraid patient was too weak to stand it, but as the temperature continued stubborn, and could not be reduced below 101° or 102° F. with quinine, arsenic and iron, on the 9th of August, twelve days from the date of my first visit, I administered a hookworm treatment, stopping all other medication. The patient had been unable to take much nourishment since the first time I saw him, and was too weak to raise up to take medicine or food. I was greatly surprised upon my arrival on the 11th to find him out of bed. The chart showed that there had been absolutely no fever since the exhibition of thymol treatment. Patient had also been taking his nourishment well, and was rapidly gaining strength. An uneventful recovery followed.

Believing this to be a rational method of treatment for such a patient, I began to treat similar cases along the same line. Since that time I have treated seventeen other cases of chronic malaria with just as gratifying results. Some of the patients who had been having chills every second day for weeks in spite of the persistent use of anti-malarial drugs, after a hookworm treatment responded most beautifully to their exhibition. All of the other cases were treated in the beginning of the attack of malaria, which I believe to be the best plan, provided the stomach is not irritable, when thymol will increase the nausea.

The second case I wish to report is one of typhoid fever with hookworm complication. It is as follows:

C. M., white, male, aged 18, came to my office on morning of July 29th. Said he had been sick all the year, and had been treated for kidney disease by several doctors. Temperature registered 103° F., and patient showed every indication of typhoid fever. Diazo positive. History showed that he had been suffering from hookworm disease in an aggravated form. My friend, Dr. Carnal, happened to be in the office at the same time, and after talking the matter over we decided to administer a thymol treatment, in spite of the fact that there was every

indication of the beginning of typhoid fever.

Patient stood treatment well, and a large number of worms were discharged.

With absolutely no other medication or even bathing, the afternoon temperature dropped from 104.1-2° F. to 102° F. Usual typhoid treatment was begun and the disease ran a very satisfactory course. Patient was up in about six weeks, and is now entirely well, none of the pretyphoid symptoms having troubled since recovery.

Two other cases were administered thymol treatment as late as the fourth week, with most gratifying results, improvement in symptoms being noticed immediately. These, however, were given small repeated doses of both salts and thymol, and the treatment lasted over a considerably longer period than that usually required.

I have also given thymol 3 to 5 grains every four hours during the whole attack in some cases of typhoid with hookworm complication, and in every case which has been well for a sufficient period, there has been a decided improvement over their former health.

Most gratifying results were obtained in the three cases treated during persistent urticaria complication. Although one cannot draw conclusions from such a small number of cases, yet it appeals to me as a rational method of treating such patients.

The cases treated during tuberculosis, diphtheria, pregnancy, and the puerperium, all showed the same decided improvement, and not once have I seen any harm result, either in treating these cases, or any other suffering with a double infection.

So far as I have been able to ascertain, there is very little literature on this subject, but recently I have written to a number of men who have been doing work along this line, and I find that their experience in double infections corresponds with my own.

So convinced am I of the beneficial results of removing the parasites from the intestines of these patients, that I have adopted the method of administering a treatment in the beginning of every case of double infection, where it is not contra-indicated.

Since I have done this, I have had little trouble with chronic malaria, the cases usually running a remarkably short course. Other diseases have had a shorter period of conva-

lescence followed by improvement in health.

Another case, though not complicated, was particularly interesting to me:

A lady, who lives in Richmond, Va., was visiting in Sedley during the past summer. She often complained of feeling badly, and, upon examination, I found she had a typical mild case of hookworm infection. A treatment was administered, and an examination of the discharges showed very few grown worms, not enough, I thought, to account for the symptoms of which she complained. However, upon closer examination I found hundreds of worms from 1-8 to 1-3 of an inch long. The same usual improvement was noticed after the treatment. The patient's home was one of the most sanitary in Richmond, and there had been absolutely no attack of "ground itch" since early childhood.

Since then I have treated quite a number of other similar cases with practically the same results. I have also noticed that in patients who are accustomed to take purgative medicines frequently, I have rarely found the grown worms numerous, but in every case where I have had the opportunity to examine the discharges I have found many small ones.

There is still another class of cases, of which the following is a type, that have been of much interest to me:

C. C., a boy 15 years old, was born in Northern Indiana, where he had lived until three years ago, when he came to Southampton County, Va., to live. He had always been very robust and healthy until last June when he had several chills. He did not regain strength or appetite, after the chills as usual. I prescribed tonics several times, but only got temporary results.

About August 1st, his condition became so alarming that his father, thinking the climate did not agree with him, decided to take him back to Indiana. Never having had "ground itch," I did not at first think of hookworm disease, but finally decided to try a treatment. It proved to be just the thing he needed, and he has now entirely regained his former health. The mode of onset in this case is not unlike several others I have noticed.

Although the lack of laboratory methods has debarred an accurate study of the cases I have treated, yet after a careful review of results obtained, the following deductions present themselves as worthy of consideration:

First.—That the course of malaria is often materially affected by hookworm complication, and that in these cases a treatment will do more than anything else to hasten recovery.

Second.—That a treatment in the beginning of typhoid fever complication, or the administration of small doses of thymol or betanaphthol throughout the attack, when not contraindicated, will make convalescence more rapid, and will greatly benefit the after-health of the patient.

Third.—That the immature hookworms, or perhaps the parasite known as strongyloids do a great deal more damage than is generally supposed.

Fourth.—That in any disease, such as eczema or urticaria, whose origin is often due to gastrointestinal disturbances, the symptoms may be caused in part, or perhaps entirely, by a hookworm infection, and that this disease should be looked for and treated if found present.

Fifth. That in view of the fact that we find so many adults, who give no history of recent attack of "ground itch," infected with numbers of the immature parasites, one of three things must hold true: The larvæ are either capable of entering the skin in large numbers without any noticeable local manifestation, or the infection takes place through contaminated food or water a great deal more frequently than is usually supposed, or the eggs must hatch inside of the intestinal canal.

Sixth. That if the parasites often enter the system through contaminated food or water, which I believe to be the case, the normal alimentary canal is not a desirable habitat for them, and that they usually select a time when the resisting power of the system is below par to lodge and begin their deadly work.

Seventh.—That no doctor, it matters not how remote from infected endemic areas he may be located, can afford to make light of the whole subject, as is sometimes the case, or to say that hookworm disease does not concern him, for sooner or later he is going to come in contact with a case, and if not familiar with its symptomatology, he will not be able to diagnose and intelligently treat it.

Eighth.—When the profession has become united on the importance of the curative and preventive treatment of this "new old disease," then will this fair Southland of ours have made a most important stride toward again

realizing the proud prestige she once held, when our national flag numbered thirteen stars and thirteen stripes.

OTHER WORK FOR BOARDS OF HEALTH— ADDED LAWS IF NECESSARY.*

By SAMUEL G. SLAUGHTER, M. D., Lynchburg, Va.
Physician-in-Charge, The Panto Sanatorium.

The control of venereal diseases presents more difficult problems than the control of all other diseases. My paper is short, a simple appeal that we get together and do something. I offer no arguments, for none are necessary. The papers by Drs. Brady, White and Harrison, submitted during this meeting, only emphasize the necessity of action. If my suggestions cannot be followed, surely this body can and must find a more rational method to deal with diseases far more disastrous than were small-pox, cholera, or the plague endemic, as they cause more suffering than either or all of the others.

The subject of this paper presents difficulties which I confess are greater than I contemplated, but I am much too interested in the subject, and too thoroughly convinced of its importance, to retreat without expressing my views and contributing what I can to weaken the terrible power of these diseases.

Individually, we have thought seriously of the subject oftentimes, and sought to find some solution of the dilemma, without making bad matters worse. But to our shame, we have not only failed to find a solution, but we have been silent and inactive. When we fought the diseases single-handed the shame was sufficiently great, but since the State has been wise enough to give the Board of Health means and almost unlimited police power, that shame has become all the greater. I confess that the Board has been handicapped by traditional prejudices which forbid even the mention of these diseases, and which seem to regard any discussion thereof as a scandal and an outrage upon modesty and public morality, and which have caused us to shrink from even admitting that these diseases exist to any very alarming extent.

Why shall the people be bound and gagged while these most dread diseases sap the vitality, strength and morality of the country—being the prolific cause of race suicide, of one-half of the blindness and 75 per cent. of the abdominal

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surgery in the land? Are we to be silent and permit these diseases to exist without exerting ourselves to the utmost to control the greatest source of these diseases? It is a poor moral that allows newspapers to print columns each year, describing the activity of the police in clearing out the scarlet women and closing the houses of prostitution, thus informing men, women and children, that the vice exists and that the viciousness continues, but holding out no hope of its eradication or even promise of effort in that direction.

Are these people—the vicious—so strong that they cannot be controlled? Shall we admit that the evil is too strong for us to cope with or that we cannot suggest a remedy? The moralist and the vicious alike insist that we must not license immorality, and we cannot, although we know and the people know that the police raids are but thin veils of hypocrisy, and that the house and inmates are licensed through fines *p. r. n.* for police purposes. But because we cannot license, shall we not dare to attempt to control the diseases fostered in these houses?—and by these people? Is it that we feel *we cannot cope with these diseases, and hence seek to avoid responsibility by putting the matter aside, or underestimating its power?* Surely no human being is doing a public good who belittles these diseases. Do we too easily forget that the simple lesion all too often becomes constitutional, and that men, women and children suffer because we, shall I say, dare not lift our hands against this hypocrisy and ignorance?

It must be acknowledged that *the fault lies largely in the hands of the medical profession. How many of us have tried to impress upon patients coming to us with venereal diseases the seriousness of their condition, and to impress upon them the fact that the local troubles may become very serious because of the liability to become constitutional; that the toxin set free in the body may cause untold misery to them and those with whom they come in contact, either direct or indirect? Truly "though the mills of the Gods grind slowly, yet they grind exceedingly small."* These diseases start, but no man knows where they end. Too often they are found in the bodies of the best loved ones, invalided and crippled.

Surely, gentlemen, we cannot—will not—be silent or inactive longer. We must be up and doing. I offer neither statistics nor argument,

but ask what can we do? I ask you, for, like you, I can see objection after objection—cannot see any aid through public education except through the unfortunate individual patient. This medium we should use to the very utmost. We should teach the father so that the son may understand that sowing wild oats saps the vitality and leads to misery. The father should guard the son as the mother guards the daughter.

The subject is immoral, unclean, loathsome—to the pure all things are pure, but the lily dragged through the mire is soiled and cast away. We cannot have our children dragged through such a subject in public education, but when a patient comes to us with venereal diseases, we can teach him much, and we should have circulars to give the patient, written and endorsed by the Board of Health, as have been written on other contagious diseases, showing the extreme gravity of these diseases and the prophylaxis of syphilis and gonorrhea. Then I would like to have this Society adopt resolutions looking to the adoption by the legislature of laws as far as necessary to enforce our views (though I believe the Board have ample police power), for the State is under obligation to enact all provisions which may tend to prevent the propagation of transmissible diseases.

It is a fact that syphilis and gonorrhea are continually transmitted from contaminated persons to those who are healthy, and, therefore, these diseases are included in that obligation. Prostitutes are the principal source of the disease; they are the persons to whom such provisions should most rigidly be applied. By an enforcement of these suggestions or similar ones, we get in a wedge to finally rend this wall made of cowardice and hypocrisy.

It is now well established and generally recognized by the medical profession that venereal diseases are a potent and extensive agency in causing many diseases which are not generally understood by laymen to be attributable to such causes; and it must be the purpose of this Society to adopt some adequate means whereby this extensive and serious source of disease may be controlled.

Allow me to suggest the adoption of the following resolution:

First. That when any house shall be known to be used as a place of assignation or prostitution, all persons living in such house, or using such house for assignation or prostitution, upon

proof thereof, be placed under the jurisdiction of the Board of Health.

Second.—That under proper provisions and regulations of law, all prostitutes, who are discovered by such inspection and examination to be suffering from any venereal disease, be isolated and kept isolated in an institution to be provided by law for that purpose until cured.

Third.—That should any case be found to be incurable, the person so afflicted should be permanently isolated in some institution to be provided by law for that purpose.

These resolutions do away with any suggestion of giving a license. The Board of Health does not act till police (any one can ask for police inspection if he has cause to think that a house is a source of transmissible disease) have reported to the Board that certain houses and inmates should be inspected. If causes of disease are discovered, they can be brought before a court, and any violation of the rules punished by a proper fine. A fine cannot prevent the transmission of disease nor control it, but such money in the hands of the Board would help to stamp out these diseases. The Board of Health and Police should work hand in hand.

510 Church Street.

LESIONS OF THE SACRO-ILIAC SYNCHONDROSIS—A CLINICAL STUDY.*

By JOHN DUNLOP, M. D., Washington, D. C.

The subject of sacro-iliac relaxations and dislocations is becoming of greater interest daily, and every year something new is added, both in the line of diagnosis and treatment. By presenting a few cases, I hope to prove that this subject should be of interest to every practitioner, no matter what his specialty.

Case I.—The first case is that of a married woman 45 years of age. Eight years ago she had an extremely hard labor. She was in labor thirty-six hours, was twice given an anesthetic, the child was born dead and she was severely torn. Immediately after this she began to suffer with backache, although previously she had never known what backache was. Since that time she has had backache constantly, varying, but on the whole increasing in intensity, and the whole condition has become much more severe. From the simple backache of eight years ago, she now has pains running down the

back of both legs to the toes, at times more severe than at others, and in pointing out the place where the pain begins she refers directly to the sacro-sciatic notch. The backache she points out as starting "in the two little depressions" (the fossae of the posterior superior spines). From these points she has pain that radiates around over the hips, especially to the left, where she says "it extends all the way around to the center of the front, deep in and low down." At times it is in the hip joints. In fact, she says her legs ache so that at times she cannot stand.

She also has pains which extend up the back, under the left shoulder blade and into the neck. She calls this a headache in her neck; the back of her head, low down and back of her ears. All of her symptoms are exaggerated during the menstrual period, and at times become so severe that she is compelled to go to bed.

During these eight years she has consulted a number of physicians. They have taken her pulse, looked at her tongue and given her a "tonic," and have told her that she must expect and put up with her troubles, that it is all due to a change of life and that when it is over she will be quite well again. This patient told me that I was the first physician who had ever examined her back.

My object in presenting this case is to teach us the most important lesson of any in my series—that we must listen faithfully to the history which our patients give us and that we must not jump at conclusions. No doubt many of her former physicians thought her condition due to the institution of the menopause, but I also fear that the picture too closely represented the so-called typical neurasthenic for some of my fellow-practitioners to escape.

The examination in this case was quite typical of injured sacro-iliac joints. Flat back, lateral deviation, the back movements restricted in all directions, especially the hyperextension. Slight motion was felt in both joints and pain was easily elicited by the leg bendings in the prone positions which have a tendency to produce undue motion in the synchondroses.

Case II.—The next case was much more difficult to diagnose and presented quite a complex picture. A married woman 42 years of age; no children and no pregnancy. For some months she had been suffering with certain physical complaints and her home life was any-

*Read before the Medical and Surgical Society of District of Columbia, January 5, 1911.

thing but pleasant, partially due, she says, to her husband's irritability and partially to her own upset nervous system. In fact, the latter condition seemed to be what was most distressing to her and, more than anything else, led her to seek the advice of a physician. She first consulted her physician in the spring—about nine months ago. At this time the most prominent symptom was an indefinite pain low down in the right iliac fossa, which at times descended to the groin of that side. Her physician had considered the possibility of appendicitis and had kept her under very close observation and several times was on the point of sending her to the hospital, fearing an acute attack, on account of pain. Fearing some pelvic disturbance, several pelvic examinations were made two of which were in consultation, but at no time was anything but a normal pelvis made out. One of these examinations was made with ether anesthesia. An enlarged colon was thought at one time to account for the symptoms and dietary measures were adopted to correct this.

As everything was so vague she was advised to go to the country, and instructions for her general health were given. On her return in the fall she had improved in every way. The pain in the right iliac fossa, however, remained and was the source of great mental anguish, as she suspected something of a cancerous nature. From the time of her return she steadily became worse until, following her pelvic examination under ether, she was referred to me.

At the time of her visit to me she complained of backache in the sacral region which at times extended down the back of her thigh. Pain in the right iliac fossa seemed to start, she said, at the right side of her back, and this same pain she said extended up her back a short distance. She is a very well nourished and healthy looking woman and one could hardly believe that she had suffered as she said she had. Her sickness continues normally and there had never been any more severe symptoms at that time. The back was examined and as well as could be made out, the ordinary tests to locate a sacro-iliac lesion were negative. The history was so suggestive that I concluded to try the therapeutic test and so caused fixation of the pelvis with adhesive plaster.

At her next visit I was disappointed, for although she had received benefit for twenty-

four hours, she then seemed no better and said she was about the same. As I had been able to relieve her for about twenty-four hours and as I learned that she had been imprudent about avoiding the strain to the joints, I decided to follow up the clue and, if possible, prove the diagnosis. I was much more careful the next time in keeping up the fixation and guarding her against the things which put a strain on this portion of the back, and to my great delight I was rewarded on the next visit by seeing a woman who was much improved mentally and who said that all of her symptoms were subsiding. From this time, she improved steadily, until now only a slight pain remains in the right iliac fossa. I forgot to say that there had been some indefinite leg pains discovered after treatment of the pelvic articulations had been instituted and that these had been entirely relieved by arch supports.

This case is of special interest to the gynecologist on account of the pains referable in an indefinite way to the pelvic organs, the position and condition of the uterus, tubes, and ovaries often giving somewhat the same indefinite symptoms.

It is of interest to the general surgeon in that it simulated a chronic appendicitis by the referred pain in the right side and into the groin. It is of interest to the genito-urinary surgeon on account of the extension of the pain into the groin and symphysis region, often, but perhaps not so much in this case, *picturing* an ureteral or kidney stone.

To the general medical practitioner this case would be of the greatest interest. A woman in apparently perfect health, but who has so many complaints, certainly suggests neurasthenia. The pain in the back suggests lumbago, rheumatism, a gouty diathesis, etc. The persistence of the pain in the right side had suggested intestinal stasis. A new growth was also to be considered.

Case III.—The next case is of great general interest. It is that of a woman 58 years of age. She is quite old for her age and looks as though she had been a very great sufferer. She is very sparsely nourished. She complained of "pain from her left hip down the outer side of the left leg to the foot." At times the backache is so bad that it "envelops" her. She has had pain at times in front of the right thigh. She is comfortable when she sits, but in standing the

pains come on very badly. At night she can lie only on the left side or on the flat of the back. She has had violent headache in the back of the head, the eyes and the temples and has a sensation of the head pulling backward. At times the leg has been so painful that she could not touch it. She had been told that her trouble was sciatica and rheumatic gout. Twenty years ago she had an ovariectomy in an attempt to relieve her headache and on account of her inability to walk.

The woman was so nervous that it seemed impossible to get a consecutive history, often a typical point in the history of such patients. Her examination was quite different from the last case. She was very poorly nourished and all signs and symptoms were easy to demonstrate. Her lumbar curve was partially obliterated; the lumbar muscles were very prominent and in intense spasm, as demonstrated by palpation. There was a moderate complete left spinal curve. The sacral region was prominent and the region of the posterior superior spines well marked. Anterior and posterior bendings restricted and slightly painful, there being very little motion in the lumbar region. Both lateral bendings gave acute joint pains, especially referable to the left sacro-iliac joint, down the left thigh and extending into the left hip joint. There were no pains referred to the right side. There was some pain in the left lower abdomen with these bendings, but none referred to the right side. Motion was definitely made out in the left joint when the left leg was lifted as in taking a high step. The examination in the prone positions referred all symptoms to the left sacro-iliac joint. The feet showed no lowering of the arches and were in very good condition. There was some slight swelling of the legs, probably due to a sluggish circulation.

Case IV.—This case is of interest as it represents a relaxation secondary to great emaciation. Mr. J. F. E., 60 years of age, came to me suffering with sciatica and severe backache. Eighteen months previously he had had an attack of sciatica which had been relieved by ten days' rest. Between that time and the time when I first saw him he had had two or three attacks of sciatica, each succeeding one being more severe than the preceding and much harder to relieve. For the last four months he had suffered continuously and his weight had been reduced from 152 pounds to 119 pounds.

Sleep was almost impossible. During this time numerous things had been tried, but he had received no relief. At the time I saw him it was very evident that his suffering was intense and he was extremely weak. During examination he almost fainted and required stimulation. He showed all the symptoms of a double sacro-iliac relaxation with the most painful point at the right sacro-iliac joint. His abdomen showed a much enlarged liver and on the surface one could feel nodules. A mass could be palpated in the region of the pylorus. Nodules were also made out in the skin over the abdomen.

I strapped his pelvis and gave him some immediate support and had a consultation with two medical men who verified the diagnosis of carcinoma of the stomach with metastases and a general depletion. He was relieved of the backache and sciatica to a very great extent, but died within the month. This case is cited to show how varied the onset of this condition may be and how we may at times lessen the suffering in such cases, although we may know that they are fatal.

Case V.—This, described as Case II in a previous paper, is the case of a maiden lady of middle age. Complaint: "Tired feeling below waist-line in back, pain below left hip and down left thigh, often extending to heel."

About twenty years ago, while sitting on a camp-stool, the stool broke, and she struck the end of her spine on a rung of the stool. Following this she suffered a great deal with sick headache. Twelve or fifteen years ago she had an attack of sciatica which, she says, was not very severe. About five years ago she had another fall which jarred her spine considerably, but she was not incapacitated to any great extent. For several years she has had "tired feelings" below the waist line, which came on after exertion, almost always following physical exertion, but at times after board meetings and social functions. For the past year her suffering has been such that she has had to lie down most of each afternoon, resting better when lying on the abdomen.

Her chief pain was referred to the tuberosity of the left ischium and down the left thigh, often extending to the heel, with an uncomfortable feeling over the whole sacral region. On examination there was a moderate curvature of the spine with high left hip. The patient was

quite fleshy and the outlines of the sacrum were obliterated, motion at the sacro-iliac joint impossible to make out, all spinal motions were free, and, in fact, with the exception of a slight scoliosis, the examination was negative. The diagnosis of relaxation in this case was made from the history. Treatment was instituted and almost immediately improvement began, and within a few weeks the patient was practically well. She went abroad the next summer and following a tedious railway journey, which was also a very rough one, due to the speed and swaying of the cars, her back trouble began again, and although she improved greatly with rest and the more careful use of apparatus, she was not entirely relieved until she returned to Washington and I put her under more careful observation. She has now gone for several months without pain and, so far as she knows, is perfectly well. She has worn no form of apparatus for months.

This patient had sought advice from twelve physicians before coming to me. She had tried everything that could be thought of, including osteopathy, and had finally become a great advocate of the homeopathic school, and in answer to an inquiry on my part, said that at least they could do no harm. I feel that it is just such cases that so often seek the osteopath for relief; and it is greatly due to our neglect that the osteopath exists. The recognition of such cases will do more to stop his onward march than any form of legislation.

Anatomy.—It has now been conclusively proven that there is definite motion at the sacro-iliac joints. Because of the conformation of the pelvic articulations, motions are possible in certain directions only. Physiologically, these motions tend to increase or decrease the pelvic diameters, as in child-birth, the motions being about an axis through the lower portion of the sacro-iliac articulations, or about the middle of the sacrum. The articulations are of such a character that their stability depends almost entirely upon the dense ligaments which bind them in place; therefore, any condition of the system which would render these ligaments less dense, or which would destroy their continuity, such as an injury involving a tearing or stretching of the ligaments, would allow motion at the joint.

Etiology.—The etiological factors are many and varied, and I believe if we go carefully

enough into the history we can almost always find a cause to which we can ascribe the condition. Undoubtedly, however, there are certain cases which are so insidious in their onset that any definite cause is difficult to ascertain. The following classification is suggested as fairly covering the field:

I. Physiological: Under this head will fall—

(a) pregnancy, in which condition the entire pelvic region is more copiously supplied with blood, and the protuberant abdomen, due to carrying the fetus, causes a chronic strain on the ligaments which are being prepared for the stretching at labor; (b) parturition. In this state the ligaments are always stretched, and often torn, more especially in the elderly primipara, where the soft tissues are always less flexible; (c) menstruation. At this time, as in pregnancy, the general blood supply to the pelvic region is increased, which is the probable cause of the softening of the ligaments. In a number of my cases the symptoms were always exaggerated during the menstrual period, and it is this class of cases which would, I think, be of great interest to the gynecologist; (d) general lack of tone. Under this heading come those cases where the ligamentous and muscular structures of the body generally are in such a condition as to become more easily stretched or strained when slight forces are brought to bear. Usually, the feet are most affected, as the greatest strain naturally is put upon the ligaments holding the arches of the feet in position. So also the ligaments holding the sacro-iliac joints become more stretched and allow the sacrum to assume an abnormal position, or position of strain. This class of cases is a very definite one, and the combination of the feet and back symptoms is almost constant; and I might add that, following relaxed feet, the attitude of the body and the line of weight-bearing is so changed that the strain is especially directed to the curves of the spine and the sacral region. The condition of the feet is very distinctive, as in the position of rest without weight-bearing the arches of the feet are well preserved, but as soon as the standing position is taken the feet become absolutely flattened. In such cases the treatment of the feet is as important as that of the sacro-iliac joints.

II. In the second general grouping are those cases due to trauma. This I divide under two sub-heads of *acute* and *chronic*.

Under the heading *acute* come (1) direct blows to the sacral region of the back; (2) twisting of the back, in falls or sudden wrenching; (3) straining of the back by lifting heavy objects; (4) accidents where there is a general shake-up, as for example, railway accidents; (5) constant jolting, as in automobiling; (6) obliteration of the lumbar curve in prolonged anesthesia.

Chronic.—The causes of relaxation which I term chronic are those which produce a more or less steady strain during a prolonged period of time. A partial classification would be (1) relaxation of the normal lumbar curve of the spine due to long recumbency, as in typhoid fever or fractures; (2) body malformations causing prominent pendulous abdomens, such as obesity and many of the large abdominal tumors, as for example, fibromata, myomata, and ovarian cysts; (3) relaxed attitudes, which are apt to be part and parcel of a general relaxation. This applies especially to the class of cases where general enteroptosis is the predominating symptom; (4) faulty methods of dress. This includes more especially the horrible footwear which women call shoes, with high Cuban and French heels, where the weight-bearing line is so changed that strain is referred to the lumbosacral region. Many forms of corsets may also be included under this heading, which would include any garment that would have a tendency to produce an unnatural attitude and compress or restrict the abdominal or thoracic organs in their normal functions; (5) occupations which put a constant strain upon the lumbar regions of the spine; (6) malformations and deformities, as, for example, the strain to which the joint is subjected in the pathological condition of the hips, knees and feet where the weight of the body is unevenly distributed between the two legs, as in hip disease, fracture of the neck of the femur, stiff knees and ankles, scoliosis and uneven length of the legs. We can see from this group what an immensely wide field this subject covers.

In all of the chief etiological factors the injury to the joint is a strain or sprain of the joint ligaments. By strain, I mean merely a stretching of the ligaments, while sprain would imply a definite tearing of the ligamentous tissue.

There are a number of diseased conditions of the sacro-iliac joints which have symptoms similar to the relaxations and dislocations, such

as infectious, atrophic and hypertrophic arthritis, and it is only by the use of all the means at our disposal, especially the X-ray, that we can differentiate them.

(Concluded with discussion in next issue.)

PUPILLARY REACTION IN HEALTH AND DISEASE.*

By C. W. BANNER, M. D., Greensboro, N. C.

It is not my purpose to try to give an extensive treatise on the subject of this paper, but only to present a short paper, pointing out some of the practical and helpful phases of the subject, and calling attention to those conditions that we are liable to meet in every-day practice.

In studying the reaction of the pupil in disease, it will be necessary for us first to have clearly in mind its reaction in health. We must remember that the pupil is merely an opening which is constantly changing size, in accordance, first, with the intensity of the light present; second, with the amount of accommodation being exerted; and, third, the convergence being used. The personal equation of the individual must likewise come in for consideration, for the same light, or same amount of accommodative action used by different individuals, will vary very greatly in its effect as shown by the pupil, producing a much greater effect in a neurotic individual, or in the same individual when laboring under stress, or some condition of nervous tension. Also, the converse is true, that the action will be less marked if the individual is in a passive or semi-comatose state, all of these actions or reactions of the pupil being in great part involuntary. Another thing for us to remember is that the pupillary action is under the control of two separate and distinct nervous systems, the ciliary branch of the third, or motor oculi, on the one hand, and the pupillary branch from the cavernous plexus of the sympathetic system; the former is distributed to the sphincter of the iris, and the latter to its radiating fibres.

We must further bear in mind that the contraction or dilation of the pupil is a complex act, and that a complete and full contraction of the pupil, for instance, is not accomplished by a mere stimulation through the branches

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from the motor oculi, causing the sphincter to contract, but must be associated with a relaxing action through the sympathetic system, causing a relaxation of the radiating fibres, and *vice versa*, and varies in intensity as the one or the other nerve force predominates.

Again, it is necessary for us to keep in mind the consensual reaction of the two pupils in health, remembering that a ray of light entering, say the right eye from the right-hand side, falls on the nasal side of this eye, and on the temporal side of the left eye, and yet the reaction in the two eyes is exactly equal.

With these things clearly in mind, it is comparatively easy to understand many of the pupillary conditions that are constantly confronting us in many brain and nerve diseases, and we can make these pupillary conditions of much help in diagnosis and prognosis of this class of cases. For instance, if we see both pupils contracted, we begin to think of some disease that would irritate or inflame the point of origin or course of the motor oculi nerves, or paralyze or limit the action of the sympathetic branch supplying the pupil, such as the early stages of meningitis, encephalitis, an apoplexy of the pons, early stages of epilepsy, locomotor ataxia, uremia, retinitis (of both eyes), opium or alcoholic poison, the use of myotics, etc.

On the other hand, if we have both eyes unevenly dilated, we would think of a condition that would interfere with the functions of the motor oculi, or else stimulate the sympathetic; and we look for intra-cranial tumors, effusions along the tract of such nerves, the premonitory symptoms of locomotor ataxia, late stages of epilepsy (the pupil being dilated following the attack), paralysis involving both third nerves, amaurosis, acute uremia, melancholia, double glaucoma, acute inflammation of the sympathetic, or of the cervical cord, the use of mydriatics, atrophy of the optic nerve—in fact, any disease causing high pressure in the cranium. Also, we must not forget the dilated pupil caused by intestinal parasites, especially in this day of our great interest in and search for hookworms, and we will almost invariably find the pupil dilated in these cases, provided we make the examination away from any intense bright light. Psychic excitement and hysteria must also come in for consideration here, for, while a dilated pupil is not always present in these cases, it is so generally

present that we cannot afford to overlook it in any suspected case.

Again, perhaps, we will have a condition of anisochoria, or inequality of the two pupils, and we think at once of some condition more local in character and effecting the nerves of one side only, such as a unilateral cranial lesion, tumor, abscess or effusion; acute glaucoma, iritis of one eye, carotid aneurism, tumor of the neck, a unilateral lesion of the third nerve or of the sympathetic, general paralysis of insane, or the use of either a mydriatic or myotic in one eye only. This latter is one of our most valuable diagnostic signs in cases of brain abscess, the pupil on the affected side being dilated, and reacting very sluggishly or not at all, as compared with the other eye, being greater or less in accordance as the disease is more or less advanced.

We must not forget the Argyle-Robertson pupil in which the reaction to light is lost and the reaction to accommodation and convergence remain. This, we are told, is found in eighty per cent. of tabes, and may usually be elicited in its early stages, thus helping us to early recognition of a disease in which prompt diagnosis—commonly hard to make—is of great importance; the pupils in these cases are usually slightly contracted, and the effect in one eye nearly always precedes the other. It was first thought to be characteristic of tabes alone, but it is now very generally conceded to be found in such other diseases as dementia paralytica, syphilis without tabes, multiple sclerosis, and certain injuries of the head and spine. The condition is usually permanent except in syphilitic cases, where appropriate treatment will often effect a cure.

Another condition of interest in this line is the paradoxical pupil reflex, in which the pupil dilates instead of contracts when exposed to a bright light, and contracts when the light is removed. On the other hand, we may find a convergence paradoxical pupil, in which the pupil is dilated on converging, and contracts on looking into distance. This is a rather rare condition and is found only in association with grave lesions of the central nervous system. It is often confounded with hippus, in which condition the pupil will continue alternately to dilate and contract for several minutes on being brought from a dark room and exposed to a bright light.

Still another condition in which the pupillary reaction is of great service to us, is during the administration of an anæsthetic, and a close watch of the pupils will often warn us of impending danger. During the administration of chloroform, we usually have a slight dilatation of the pupil during the first stages of the anæsthesia, which gradually contracts as the second stage begins and this is continued through the third stage unless a very profound and dangerous stage is reached, when it is in turn followed by a second dilatation. A sudden full and complete dilatation of the pupil following the third stage of chloroform anæsthesia is a danger signal not to be overlooked or disregarded, especially if it be associated with inco-ordination of the pupillary reaction to light, etc.

In ether narcosis, the pupil begins to dilate during the first stage of the anæsthesia, and becomes more advanced as the anæsthesia progresses. But the dilatation is not complete and full, and the pupil usually retains its power of co-ordination so long as we are within the limits of safety.

It has not been my object, in the consideration of this subject, to try to cover the whole field, but only to point out some of the most usual conditions that we are likely to meet in every-day practice, and to call attention to those diseases that are most likely to cause the condition.

Proceedings of Societies, Etc.

SURGICAL SECTION OF THE NORFOLK COUNTY MEDICAL SOCIETY.*

Reported by FRANK H. HANCOCK, M. D.

Operation for Undescended Testicle—Absent Menstruation—Obliterative Changes in Appendix, etc.

Dr. Israel Brown, reviewing interesting articles that have appeared during the past month in the *Journal of Obstetrics, Gynecology and Surgery*, called attention to a new operation described by Davidson for undescended testicle. Davidson takes advantage of the position of the spermatic vessels above the internal ring, and succeeds by the transplantation of these in lowering the whole cord. Thus he preserves the structures with their natural blood supply, giving

the best prospects for physical and functional development.

The speaker also related the remarkable history of a Greek woman, 40 years of age, recorded in the same journal. She had given birth to eleven children, five of whom were living, but had never menstruated in her life. Her grandmother had the same history of complete amenorrhœa, and her mother had only menstruated once in every one or two years; she had never had any symptoms, subjective or objective, that a period was due.

The interesting report of McCarthy and McGrath, of St. Mary's Hospital, Rochester, Minn., relative to obliterative changes in the appendix was discussed. They established the fact that obliteration of the lumen is never physiological, but always inflammatory. Ninety per cent. of the twenty-two cases of carcinoma occurring in 5,000 appendices showed previous obliteration of the lumen. In seventeen of these twenty-two cases of carcinoma of the appendix, the serosa was unaffected; therefore, the surgeon would not have known of the condition.

Arbuthnot Lane and Charles Mayo simultaneously called attention to partial obstruction of the lumen of the ileum—the last 10 inches of which is congenitally pelvic—at its passage over the brim of the true pelvis, resulting in intestinal stasis, with reflex symptoms referred to the stomach, duodenal distention, and oftentimes relating to the appendix.

This is undoubtedly a very important observation, and in performing an appendectomy the lower ileum should be most carefully observed.

Hyperthyroidism.

Dr. J. Warren White read extracts from interesting papers in the *Journal A. M. A.* for the past month. Crile's belief that hyperthyroidism was psychic in character seems to be clearly proven, according to this writer; and he deals with it at length. His method of overcoming this is ingenious, and often successful. The original operation done was discussed in detail.

Duodeno-Jejunostomy for Regurgitant Vomiting.

Dr. P. St. L. Moncure, of this city, reported a case of duodeno-jejunosomy, following a posterior gastro-enterostomy for the relief of regurgitant vomiting of bile and pancreatic juices. This drainage effected the easy passage of the

*Meeting at Norfolk, Va., April 10, 1911.

bile and pancreatic juice into the jejunum and there was no subsequent trouble.

Hysterectomy for Profuse Menstruation.

Dr. Edward T. Hargrave reported some surgical cases as follows: Profuse menstruation in a white female of 25 years was only relieved by the removal of the uterus itself, which was the second celiotomy, the first being a removal of the right ovary and tube and resection of the left, which did not affect the hemorrhage at all. This woman had a sister who likewise had a profuse periodic flow, which is interesting from the standpoint of heredity, and is analogous to the family history of the Greek woman who was completely amenorrhœic.

Another case was also mentioned of menorrhœa in a woman 21 years of age, in which removal of both ovaries and tubes failed to relieve the profuse bleeding, and in consequence of which he contemplated an early hysterectomy.

Value of Bacterins.

Dr. Harvey Baker read a comprehensive paper upon the subject of bacterins. This paper was extensively discussed, the general impression being that in gonorrhœal arthritis the Neisser bacterins were signally successful. The author's experience with the staphyloacne bacterin was very encouraging. His chief results seem to have been obtained with the strepto-bacterin in facial erysipelas, where temperature and pulse responded almost immediately and there was no further spread of the infection.

Dr. Lomax Gwathmey described many kinds of cases in which he had used bacterins, but said that among numerous strains the use of stock vaccines must always be more or less inefficacious, and that uniform results could only be obtained with the application of autogenous vaccines.

Tuberculous Kidney and Cecum.

Dr. R. L. Payne, Jr., exhibited a T. B. kidney in which there was a large cavity in the upper half. The interesting feature of this was that there had been no symptoms of this affection until within three days of the time when he removed the kidney. The symptoms then were pain in the back and some bladder irritation; albumen was also discovered. *Dr. Payne* cystoscoped the bladder, and, finding the left

ureter somewhat inflamed, catheterized it, and in the urine thus obtained tubercle bacilli were found by his assistant, *Dr. Bradford*. The kidney was immediately removed.

Dr. Payne also exhibited a T. B. cecum which he had removed with about six inches of the ascending colon, with transplantation of the ileum. All symptoms disappeared after this operation; the patient is gaining weight, and is comparatively comfortable.

Analyses, Selections, Etc.

Operative Treatment of Fractures.

Carroll W. Allen says that in cases where the ends of the bone are badly splintered and fragmented with necessary loss of the comminuted parts, a perfect carpenter's joint can only be obtained by extensive resection of the ends with consequent further loss of length; in such cases, restoration of the length of the limb should receive first consideration, and we should abandon the idea of obtaining a perfect carpenter's joint; the callous that is thrown out later will smooth over all irregularities. In a case cited of a compound, comminuted fracture, the comminution caused a loss of about three and a half inches, but by using a long spicule of bone and striking it into the medullary cavity, the gap was bridged and what would otherwise have been a tremendous loss of length and permanent disability prevented; the result was a shortening of but one-fourth of an inch. In cases seen three or four weeks or longer after fracture it is advised not to be hasty to do a resection of the overlapping ends, because by firm and steady traction for one-half hour, or longer if necessary, combined with manipulation of the fragments and the division here and there of resisting fibrous tissue, reduction can frequently be accomplished. Great care is necessary, however, in these maneuvers not to lacerate vessels or nerves that are caught in fibrous tissue.

The author states that far too many limbs are needlessly amputated. With a little hard work and some ingenuity, the surgeon may save many a badly mangled limb; as long as the blood-supply is sufficient to keep alive the peripheral parts there is a chance. He concludes by saying that it is better for the patient to spend six months in a hospital to come out with

a sound limb and able to make a living than to be discharged after three weeks with the loss of a limb to become a charge upon the community.—(*Southern Medical Journal*, April, 1911.)

The Pharmacodiagnosis of Cardiac Diseases.

Albert Abrams (*Archives of Diagnosis*, October, 1910,) calls attention to the value of the employment of drugs in the diagnosis of some affections of the heart, a subject which he has discussed more fully in a recent volume, entitled "Diagnostic Therapeutics." The heart reflex is a contraction of the myocardium of varying duration when the skin of the precordial region is irritated with a blunt instrument. The reflex may be observed with the X-rays or by accurate percussion. A most effective method of obtaining the reflex is by concussion of the spine of the seventh cervical vertebra. Inasmuch as atropine paralyzes the motor endings of the vagus, a full dose of this drug (1-60th of a grain), during its physiologic action, will abolish the heart reflex. On the other hand, a hypodermic injection of pilocarpine (1-10th grain) will cause an exaggeration of the heart reflex.

Another cardiac symptom which is influenced by drugs is tachycardia. It is well known that tincture of aconite slows the heart by stimulating the vagus, but has only a slight action on the heart muscle. If the patient has tachycardia which is relieved by aconite, we may assume that diminished tonic activity of the vagi exists. In tachycardia from paralysis of the vagus the heart does not respond to digitalis because the latter slows the heart by stimulating the vagus; hence, if we find that the vagus is paralyzed or weakened, strophanthus is better because it acts directly upon the heart and not upon the vagus. Myocardial disease may be diagnosticated with the aid of drugs when there are symptoms of broken compensation even without cardiac signs. Digitalis should be given as a test for five days, and if the symptoms are not relieved and there is no increased strength of the pulse, the drug can do no good, and can even prove dangerous. With a reliable preparation of digitalis, the effect should be noted after thirty-six hours.

Cardiac asthma is sometimes simulated by other conditions, such as irritation of the nasal lining. An application of cocaine will help to make the diagnosis. To differentiate

cardiac from bronchial asthma, cardiac tonics which do not influence bronchial asthma should be used. Moreover, if the patient be given amyl nitrite to inhale, the bronchial spasm is relieved and the rales disappear if they are due to the spasm and not to an accumulation of mucus.

The heart-reflex is invaluable in differentiating ventricular dilatation from the presence of pericardial exudate. In the latter case the area of dulness will remain unchanged. Angina pectoris may also be distinguished from the false angina by the use of sufficiently large doses of antipyrin. In true angina these will not relieve, but the pains of false angina are at once subdued. In cardiac neuroses rest and a few doses of morphine are capable of altering completely the picture of cardiac disease.—(*Medical Review of Reviews*, February, 1911.)

Colds and Catarrhs.

Isaac M. Heller, New York, attacks the fallacy of the cold bath or sponge as a hardening process to prevent cold. Of all the over-rated and abused medical fads in vogue, he says that this certainly stands at the head. What can be more unreasonable than trying to protect a child from recurrent attacks of croup, tonsillitis or rhinitis by means of a daily cold bath when he has a throat full of tonsils and adenoids and sleeps with an open mouth! Or, who can see the rationality of attempting to avoid a catarrhal discharge by like treatment in an adult with a chronic frontal or ethmoidal empyema? Whatever virtue these therapeutic measures possess it is only in constitutional diseases predisposing to colds or during convalescence from some prolonged and depressing illness. Yet it happens that physicians prescribe these baths and rubbings indiscriminately, often without looking into the nose or throat. This brings up another point: Examine the nose of every patient complaining of a cold or catarrh and apply a little 5 per cent. cocaine if the tissues are so swollen that you cannot see clearly. Often, one will be astonished at what he finds and will save himself the chagrin of having something discovered by his successor in the case which he never even suspected. True, all cannot be nasal specialists nor is it necessary that an exact or even approximate diagnosis be made by the general practitioner. But, every physician can or should be able to tell a practically normal throat and nose when he sees one and if, in-

stead, he discovers a bowing of the septum, a large turbinate pressing thereon, pus trickling down from above, or rough, scraggly tonsils he knows that the conditions are not what they should be. Such a case coming for the relief of recurrent colds or chronic catarrh is entitled to a more thorough examination. No man would think of treating a pneumonia, for example, without a thorough auscultation and percussion of the chest, yet it is quite common for cold or catarrh to be treated without even a peep into the nose, the physician often taking the patient's statement, "Oh, I've got only a cold in the head, Doctor!" for granted.—(*American Medicine*, March, 1911.)

Treatment of Hypertension.

H. A. Hare, Philadelphia, says that from both a theoretical and practical standpoint hypertension may be due, on the one hand, to spasm of the circular muscular fibres of the vessels, or, on the other, to arteriocalillary fibrosis. In many instances, without doubt, a condition of spasm precedes the fibroid change with its characteristic fixation, and also, without doubt, many cases owe their high tension to the presence of both spasm and fibrosis, going hand in hand. It is evident that we can accomplish much less in those cases in which high tension is due to fibrosis than we can in those which are due to spasm. This certainly is true in regard to the influence of drugs. It is not, however, so true in regard to the influence of remedial measures other than drugs, since rest, massage, Swedish movements and baths, when properly administered, undoubtedly seem to be capable of arresting the progress of fibroid change in the smaller vessels and perhaps actually producing a definite improvement in their elasticity. Further, these remedial measures, by restoring circulatory equilibrium, overcoming ischemia in one place and hyperemia in another, not only do good in that the nutrition of the parts supplied by these vessels is bettered, but also do good because the establishment of the circulatory equilibrium or circulatory balance permits the heart to perform its functions with much less effort. There can be no doubt that insufficient attention is given to the value of non-medicinal measures in the treatment of cardiovascular disease. However valuable digitalis and other circulatory stimulants and the nitrites may be, the value of rest, massage and similar measures in cases of hypertension is certainly of equal degree. Many of

the betterments, or cures, which follow the visit of a patient to one of the celebrated health resorts where cardiovascular lesions are cared for, could be equally well obtained at home if the patient would lend himself to the treatment at home as completely as he does when he is away, and if the physician in general practice would train himself to be as skilful in the employment of non-medicinal measures as he is in the use of drugs. Given a case of arteriocalillary fibrosis with some spasm, the author feels confident that a greater fall in blood pressure can be produced, and with greater permanency, by these measures than if the nitrites are administered.—(*Physiologic Therapeutics*, March, 1911.)

Arthritis Deformans and Its Relation to Intestinal Putrefaction.

Edward E. Cornwall, Brooklyn, N. Y., includes under arthritis deformans the group of supposed rheumatisms in which are associated structural changes in the joints and deformity with inflammation. There are destruction and proliferation of the joint structures but no deposits of sodium urate. Trophic changes in the articular cartilages are the dominating feature of the joint changes. Only the finger joints may be involved in early middle life; progressive polyarthritis may occur; a single joint may be involved, or there may be a progressive ankylosis of the spine. In children inflammation may be accompanied by fever, chills, sweating, and anemia, a clinical entity called Still's disease. The toxic agent that is suspected of causing this condition is putrefaction of the albuminous portion of the food by the bacteria of putrefaction. The toxins are increased by meat foods, dyspepsia, intestinal putrefaction, constipation, and catarrh of the nose and throat; also by anything that lessens the resisting power of the body. Illustrative cases are given. The treatment consists of omitting the proteids from the diet, and of feeding with vegetables, fruits, cereals, and artificially soured milk containing the lactic acid bacteria. Salicylates do no good. The fats should be pushed. In cases of debility and lack of nutrition it is necessary to feed up the patient.—(*Medical Record*, April 1, 1911.)

What is Rheumatism?

Herbert C. De V. Cornwell, New York, states that articular involvement is only one symptom of rheumatism and not the whole disease. This he believes to be an infection or general intoxication.

tion affecting tonsils, heart, joints, muscles, etc. The *Diplococcus rheumaticus* has been isolated from practically all tissues that are subject to rheumatic manifestations. In rabbits it causes rheumatism. The tonsils may, in most cases, be the portal of entry for this microorganism. Individuals who suffer from repeated attacks of rheumatism are often free after removal of the tonsils. The disease finds its favorite points of attack in serous membranes and in the lymphatics of the muscles. Children suffer most from throat, heart and constitutional symptoms and less from joint affections than adults. The author believes that chorea minor and rheumatism come from the same cause. One cannot ignore the relation of nutritional troubles to rheumatism.—(*Ibid.*)

Book Notices.

Internal Secretions from a Physiological and Therapeutical Standpoint. By ISAAC OTT, A. M., M. D., Professor of Physiology, Medico-Chirurgical College of Philadelphia; Ex-Fellow in Biology, Johns Hopkins University; Member of Society for Experimental Biology and Medicine, etc. 12mo. 133 pages. Illustrated. E. D. Vogel, Bookseller, Easton, Pa. 1910. Thick paper cover. Price, \$1.

A general review of internal secretions is incorporated in this little volume, and is based on lectures delivered to students, as well as on results of the author's laboratory experiments. There are three chapters, as follows: The Parathyroids; The Pituitary, and The Correlation of Glands with an Internal Secretion. The remarks are intended to be practical rather than theoretical.

Handbook of Practical Treatment. In three volumes. By 79 eminent specialists. Edited by JOHN H. MUSSER, M. D., Professor of Clinical Medicine, University of Pennsylvania; and A. O. J. KELLY, M. D., Assistant Professor of Medicine, University of Pennsylvania. Volume II. 8vo. 865 pages. Illustrated. Philadelphia and London. W. B. Saunders Company. 1911. Per volume: Cloth, \$6 net; half morocco, \$7.50 net.

This second volume is even better than the first, which was received with so much favor by the profession. Its especial usefulness consists in the sound treatment of the usual run of diseases met with in daily practice, and does not concern itself so much with the speculative side of medicine. Among so many excellent articles, it is a difficult matter to select and say which is the best, but to single out such subjects as heart disease, typhoid fever, tuberculosis and syphilis does not by any means intimate

that the others are below the average.

The diet in typhoid fever is gone into very thoroughly, the author, while giving due credit to those who favor what is known as the "liberal" diet, still holds to the old methods of careful restrictions. The subject of tuberculosis is very well illustrated by photographs of shacks, tents, bungalows and houses for out-of-door lovers. The literature on syphilis includes a brief account of "606." Taking the volume as a whole, it is to be highly commended as a safe and sane guide for the student and general practitioner.

M. D. H., JR.

Dawn of the Fourth Era in Surgery. By ROBERT T. MORRIS, M. D., Professor of Surgery, New York Post Graduate Medical School and Hospital. 12mo. 145 pages. Philadelphia and London: W. B. Saunders Company. 1910. \$1.25 net.

This book, made up of a dozen papers which were originally published by the author in medical journals, is the result of frequent requests for reprints of articles here produced. Small incision, objection to "biting the patient to death with a pack of snapping artery forceps," disturbance of the viscera as little as possible, gentle work, less time given to unnecessary detail in technic and shorter operation, disadvantages as a rule of rubber gloves, gauze packing, etc., are some of the views presented.

Physical Examination and Diagnostic Anatomy. By CHARLES B. SLADE, M. D., Instructor in Physical Diagnosis, University and Bellevue Hospital Medical College, New York. 12mo. 146 pages. Illustrated. Philadelphia and London. W. B. Saunders Company. 1910. Cloth, \$1.25 net.

With the idea that an initial course in this subject should be practical, with a minimum of text-book study, the author considers the technic of physical examination, its fundamental methods and principles. The book deals mostly with the normal subject and the recognition of abnormal conditions, the diagnosis of specific disease conditions, with a few exceptions, being avoided. The forms of examination discussed are limited to inspection, palpation, percussion and auscultation with especial reference to conditions of the chest and abdomen. Sphygmographic findings, X-ray diagnosis, etc., are not mentioned, these subjects being left for consideration to the advanced student in more comprehensive works. Within the limitations above noted, the book will be found useful to practitioners as well as to students.

Editorial.

The Vaccination Law Upheld.

For a long time there has been great opposition to the law requiring vaccination, as it affects admission to the public schools of the District of Columbia. All manner of excuses, to prevent its enforcement, have been presented, chief among which have been constitutional debility, fear of transmission of diseases, conscientious scruples, interference with personal liberty, and, finally, an effort to prove the law vague and therefore void. It is useless to say timely vaccination is a protection against small-pox, since every observant practitioner of medicine is thoroughly convinced of this power, it would, therefore, avail nothing to argue in favor of the operation.

Until recently the opposition has accepted the necessity of vaccinating applicants for admission into the public schools, or has enrolled its pupils in private institutions not requiring vaccination.

In the District of Columbia, there are two laws, one the Compulsory Education Law, the other the Vaccination Law, the one being virtually an adjunct of the other. Section 274, R. S. D. C., reads as follows: "No child shall be admitted into the public schools who shall not have been duly vaccinated or otherwise protected against the small-pox." In order to bring the vaccination law to a test, a nine-year-old boy, who was neither vaccinated nor otherwise protected, applied for admission to the public schools, and was refused. His father, thereupon, brought the Board of Education before the District Supreme Court upon a writ of mandamus to compel his admission. The contention of the petitioners was that the law was obsolete, that it had been nullified by later legislation, and, therefore, it could not be enforced. This was claimed aside from the grounds usually set forth by the anti-vaccinationists.

Justice Anderson rendered a decision upholding the law. The decision in part is:

"There is no uncertainty in the Revised Statutes, upon which the board relied in framing the regulation.

"There can be no question as to the validity of the statutes making the vaccination of children a condition of their right to enter or remain

in public schools." He then quoted the United States Supreme Court, in *Jacobsen vs. Massachusetts*, and added: "The words 'or otherwise protected against small-pox' cannot, in the judgment of the court, be said to be uncertain or indefinite when used in connection with the word 'vaccinated,' which has a definite and well-understood meaning. It is commonly understood, and so held by the medical profession, and likewise justified by long experience, that one who has already suffered from small-pox is usually thereafter immune, as is also one who has been vaccinated without success on several occasions. The words 'or otherwise protected against the small-pox' were evidently used in the statute to embrace not only such means of protection as those just mentioned, but also such other recognized and accepted means of protection known to medical science, if any, or that might thereafter be discovered.

"The court is, therefore, of opinion that the point urged by the relator that Section 274, Revised Statutes, District of Columbia, is void for uncertainty is not well taken."

The law, having been upheld by the Supreme Court of the District of Columbia, leaves the opposition without means of appeal, and unless Congress, the legislative body of the District, will so alter or amend this law, vaccination of applicants for the public schools will be enforced.

The Cammidge Reaction.

This laboratory method, claimed by the author to be of aid in the diagnosis of pancreatic disease, was received with enthusiasm by clinicians upon the publication of P. J. Cammidge's book on "The Pancreas, Its Surgery and Pathology," in 1907. Investigators, however, soon met with difficulties in the practical interpretation of the test; lack of uniformity in the physical and chemical character of the crystals obtained from the urine in pancreatic disease, as well as the finding of similar crystals with other lesions, led to confusion. A review of recent literature indicates that the weight of clinical experience is rather strongly against the specificity of the reaction. Furthermore, the claims of Cammidge for the test seem greatly weakened by the results of two recent investigations. Whipple and King (*Johns Hopkins Hospital Bulletin*, 1910, XXI, 196,) found that dogs poisoned with chloroform, showing necrosis of the liver, usually

gave a positive Cammidge reaction. This was also true of animals with broncho-pneumonia as well as normal female animals after parturition. Human pneumonic lung hydrolyzed with sulphuric acid gave the reaction and also caused the appearance of the reaction when injected into the peritoneum of a dog whose urine was previously negative. Operation in this case showed a normal pancreas. These investigators conclude that the Cammidge reaction is not specific for pancreatic disease, but that the disintegration of any cells in the body may give the reaction.

Roper and Stillman (*Archives of Internal Medicine*, 1911, II, 252,) conclude from a chemical study of the reaction that it does not rest on a scientific basis, as the crystals are the result of a combination of phenylhydrazin with glycuronic acid remaining in the urine, and as this acid is found in the urine of persons in normal health and is increased in amount in many conditions other than pancreatic disease, the demonstration of these so-called typical crystals can have no diagnostic value.

It would appear, therefore, that little value should be given to results of the Cammidge reaction in the diagnosis of pancreatic disease.

J. C. FLIPPIN, M.D.,
University of Virginia.

Virginia Hospitals for the Insane and Epileptic.

The General Board of Directors of the State hospitals for the insane and the colony for epileptics met April 19th, and appointed for a term of four years the superintendents of the several institutions, as follows: Dr. William F. Drewry, of the Central, at Petersburg; Dr. J. C. King, of the Southwestern, at Marion; Dr. J. S. DeJarnette, of the Western, at Staunton, all of whom were incumbents; Dr. G. W. Brown, of Middlesex County, to succeed Dr. O. C. Brunk, who after several years of splendid service, declined re-election; and Dr. A. S. Priddy, of the Colony for Epileptics.

Under the supervision of Dr. Priddy the Colony for Epileptics is being erected and organized. The Drewry-Gilliam building, the first to be constructed, is most attractive, and is thoroughly adapted to the care and treatment of one hundred epileptics. Besides dormitories and single rooms for sleeping apart-

ments, and bath-rooms and lavatories, it has a large assembly or day-room, a dining-room, a kitchen and pantry, a laundry, etc., all modern in every way. The old colonial mansion has been renovated and fitted up as an administration building, and other old structures have been made to do service. The group of buildings is located on a beautiful elevation at one end of the thousand-acre farm which skirts the James River for two or three miles just opposite Lynchburg. The new institution starts well on its history of usefulness. It is pleasing to contemplate that Virginia has taken this progressive step, one which must be especially gratifying to those earnest people who have worked long and faithfully for the establishment of this great public charity.

The South Piedmont (Va.) Medical Society

Held its last meeting in the parlors of the Elks' Home, Lynchburg, Va., April 18, 1911, Dr. Samuel Lile presiding. There was a good attendance and a number of interesting papers were presented. The annual election of officers resulted as follows: President, Dr. J. S. Haile, Chatham; vice-presidents, Drs. A. T. Finch, Chase City; H. W. Dew, Lynchburg; H. C. Beckett, Scottsburg; W. O. Smith, Altavista; and secretary-treasurer, Dr. George A. Stover, South Boston. The re-election of Dr. Stover as secretary-treasurer is a well-deserved honor, as no man in this society has done more for its good, and by his indefatigable energy, he has helped this society to take its place as one of the most prominent local societies in the State. While the supper tendered the society and its guests by the local profession at the Piedmont Club, after the meeting, was most enjoyable, probably the most pleasant feature of the evening was the "toasting" of the toastmaster, Dr. Rawley W. Martin, of Lynchburg, who is one of the most beloved of Virginia's doctors and citizens.

The next meeting will be held November 21st, at Danville, Va.

New Treasurer for Medical Society of Virginia.

At a called meeting of the Executive Council of the Medical Society of Virginia, held in the office of Dr. Edward McGuire Richmond, April 26th, Dr. Greer Baughman, of Richmond, was elected treasurer of the society, to fill the unexpired term of office of Dr. R. M. Slaughter, whose resignation on account of ill

health was announced in our last issue. At this meeting, Dr. George K. Vanderslice, of Phœbus, was also appointed to read the paper on Treatment of Typhoid Fever in the subject for general discussion at the Richmond meeting next fall, *vice* Dr. R. T. Styll, deceased.

Councilors in attendance at the meeting were Drs. A. L. Gray, Edward McGuire, R. S. Griffith and C. P. Jones. In the absence of a quorum, Dr. McGuire Newton, one of the vice-presidents, was called in to act as *councilor pro tem*.

The American Society of Tropical Medicine,

Which is to have its eighth annual meeting in New Orleans, La., May 18th and 19th, has issued a program, which shows a number of interesting papers on diseases especially indigenous to the far Southern States and the Canal Zone, in which we are at present especially interested. In addition to the entertainments arranged for the visitors, an excursion is being planned to the Leper Colony on the day after the adjournment.

The Augusta County Medical Association

Held its first meeting of 1911 on the 3d of May. Among those who read papers and participated in the clinical discussions were Drs. A. J. Burkholder, M. J. Payne, J. S. DeJarnette, A. Hume Sprinkel and T. M. Parkins. Dr. F. M. Hanger was elected to succeed Dr. E. Lacy Gibson as one of the trustees of the Association. At the banquet which followed the meeting, the president of the Association, Dr. M. J. Payne, acted as toastmaster.

The Virginia State Board of Pharmacy

Met in Richmond on the 24th of April, eighty odd applicants appearing before the Board. Hereafter meetings will be held on the third Tuesdays in January, April, July and October. The plan of standardization of examinations for license to practice pharmacy met with unanimous approval, so that if certain States amend their laws to conform to the plan, reciprocity between the various State Pharmacy Boards will possibly result.

Medical Inspectors, Richmond, Va. Public Schools.

At a meeting of the City School Board of Richmond, Va., on April 26th, Drs. N. Thos. Ennett and C. M. Baggary were appointed Medical Inspector and Assistant Medical Inspector, respectively.

The Virginia Health Department,

In its effort to prevent much of the needless blindness among infants, is asking the co-operation of the medical colleges of the State and of the State Board of Medical Examiners, feeling confident that the best results can only be attained by securing the attention of the doctors, while they are yet students.

The Department will also shortly issue a special bulletin on cancer which may be had upon request. This includes statistics as to the rapid increase of cancer throughout the country, after which follows a discussion of forms of treatment, the idea throughout the bulletin being that perhaps every cancer, if taken in its early stages, may be cured.

St. Luke's Hospital, Richmond, Va.

The addition to St. Luke's Hospital, begun almost a year ago, has just been completed. This annex contains twenty-four private rooms, a large sun-parlor and roof-garden for the use of convalescents, and a new Nurses' Home for the accommodation of a larger staff of nurses.

With the present addition, this is now one of the largest private hospitals in the country. It will be open the entire year, Dr. W. Lowndes Peple being in charge, when Dr. Stuart McGuire is off for his annual vacation in August.

The Medical College of Virginia,

At the annual meeting of its Board of Visitors on May 30th, will elect a Professor of Diseases of Children.

The Child Welfare Conference,

Which meets in Richmond, Va., May 22-25, promises from present indications, to be the largest of its kind ever held in the South, and is expected to mark an epoch in children's work in the State. In addition to special addresses, several hours daily will be given to informal discussions of practical problems.

Obituary Record.

Dr. Herbert Milton Nash,

Of Norfolk, Va., one of the most highly esteemed and best beloved physicians in this State, died April 26th, after a painful illness

of several months from gall-stone colic. On account of the intense suffering, he finally submitted to an operation, though, owing to his advanced age, little hope was entertained of his recovery.

Dr. Nash was born in Norfolk, Va., May 29, 1831, and on both sides was descended from prominent families who had lived in his native county for several generations. After the usual academic education, he entered the University of Virginia in 1851, and graduated with the degree of doctor of medicine in 1852, after which he spent a year in New York taking clinical instruction. He entered upon the practice of his profession in Norfolk in 1853, and was the sole survivor of the physicians who encountered the yellow fever epidemic in that city in 1855. At the beginning of the War Between the States, he was appointed assistant surgeon in the Confederate Army, and served with distinction throughout the war, being mustered out with the rank of Chief Surgeon, Artillery of the Third Army Corps. He again resumed private practice, and it would be almost impossible to enumerate the many honors which he so deservedly won in his profession. He became a member of the Medical Society of Virginia in 1871, served as its president in 1892-3, and was made honorary member at the Charlottesville meeting in 1893. He was several times president of the Norfolk County Medical Society, and was a member of the Medical Examining Board of Virginia from its organization in 1885 to 1908, at which time he tendered his resignation on account of advancing age. Dr. Nash was prominently identified with many public health measures, and was a member of many local and national medical organizations in addition to those named above. He was ever present where duty called, his love for his profession being second only to that for his family.

Two daughters and one sister survive him.

Resolutions on Death of Dr. Nash.

At a special meeting of the Norfolk County Medical Society Drs. Herbert Old, H. R. Dupuy, Charles R. Grandy, Southgate Leigh, L. T. Royster, James W. Hunter, Livius Lankford and Lomax Gwathmey presented the following tribute to Dr. Nash, which was adopted:

Today we are convened to express the sense of our personal and professional loss in the death of the oldest and most esteemed of our ex-presidents and members, Dr. Herbert Milton Nash.

To those of us conversant with Dr. Nash's studious

habits, consistent courtesy, high professional ideals and uniform consideration, his life has been a splendid example. He has left us the memory of an ideal character developed by Christian faith. A consistent member of the many societies to which he belonged, his especial devotion to the interest and welfare of the local society bears the impress of his fine professional sense. During the many vicissitudes of the society, his adherence to its best interests has been marked by a clear judgment and a rare foresight, and, in his last illness, he frequently expressed the desire for sufficient strength to portray to the members in a paper the contrasts of his rich, long term of practice.

A charter member in the beginning, there has been no intermission in his standing or active membership, extending as it does for over forty years.

With an unusual devotion to the interests of his patients, he realized that his own mental equipment for that service and that of his fellows was enhanced by study and by the interchange of society meetings of those ideas so acquired, coupled with and amplified by the recital of personal experiences and observations. At the end of a busy, fatiguing day, often perturbed by the serious condition of some patient, he took up medical literature and studied far into the night, his office light a beacon guiding the younger men in the only path leading to a proper conception of the medical life. His studious habits kept him abreast of the rapid advancements in medical science and found him at the end wonderfully well prepared to practice and discuss measures helpful to mankind. He brought cheer and courage into the sick room and his sympathy and hope gave strength to many a sufferer. So remarkable was his mental youth that many of us failed to realize his age and the long tenure of his life, and in the hurry of our lives neglected to honor, as we should, his vigorous mentality.

A rare light has gone out; yet long and brightly it burned, and in the end expired without haze or smoke to mar the brilliance of its memory.

Major James Evelyn Pilcher,

Died at Savannah, Ga., April 8th, after a protracted illness. He was born in Adrian, Mich., in March, 1857. After a preliminary education in public schools, he graduated in medicine from the Long Island College Hospital in 1880. He was commissioned a First Lieutenant and Assistant Surgeon, United States Army in 1883, and was rapidly promoted, retiring on account of ill health with the rank of major in 1899. He was prominent in medical and military circles, and, on account of his distinction in editorial work, was elected vice-president of the American Medical Editors' Association for two terms, and later was its president. He was secretary of the Association of Military Surgeons of the United States for ten years, and in recognition of his valuable services to the Association, was made a life member after serving in this office two years.

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Original Communications.

INCIPIENT INSANITY.*

By WILLIAM FRANCIS DREWRY, M. D.,
Petersburg, Va.

Superintendent Central State Hospital, Va.; President,
1910, American Medico-Psychological Association, etc.

A resume of some of the salient features in the recognition and the rational treatment of incipient insanity will, I trust, be of some practical value to the members of this Association. It is a noteworthy fact that frequently premonitory mental symptoms are overlooked and proper treatment deferred until a well defined psychosis develops which may be incurable or at least have a protracted history. It is also notably true that sometimes the commission of a crime first betrays insanity. The abnormal mental condition of a person had not been recognized, or perhaps was known but neglected, or kept as a secret until, on account of the commission of some offense against the law, the unfortunate individual falls into the hands of the police authorities. The life and health of many a suicide could have been saved by timely safeguards and treatment. Many patients, if their prodromal mental symptoms had been recognized and understood and prompt medical advice given, would never have been committed to an asylum to swell the number of chronics or terminal demented. The flood should be checked at the fountain head.

In order that we may the better comprehend for clinical purposes what insanity is, let us first consider what is mind. To quote Dr. Adolph Meyer, a distinguished psychiatrist, "Mind is a sufficiently organized living being in action. Not a peculiar form of 'mind stuff,' but the adjustment of the individual as a whole to his environment." Then let us have before us a working definition of insanity, or more

properly speaking, an explanation of the term insanity. No one has yet given a universally accepted definition, but Dr. Carlos Macdonald, an alienist of great repute, has given one that meets very well all practical purposes: "Insanity," he says, "is a disease or disturbance of the intellectual areas of the brain which is marked by derangement, partial or complete, of the mental faculties; a derangement which manifests itself by a prolonged departure from the methods of thinking, feeling and acting, which were usual to the individual in a normal state of mental health."

There cannot then be insanity without disease or disturbance of the cerebral cortex. There must be a process of change in the brain, evidence of which may for a time be imperceptible, but which, sooner or later, passes beyond the limits of physiological bounds and a morbid condition sets in, giving rise to abnormal mental manifestations in the individual. On account of disease the patient becomes a changed being. A man is not, however, insane because his ideas, thoughts, feelings and conduct are not in accord with those of other men, for there is not, nor can be, a universal measure by which the sanity of all men is gauged. Each individual, in his normal state, has a distinct mentality peculiarly his own; therefore, it is not simply when he is unlike other men in his mental make-up, but when he deviates mentally from his former or natural self, taking into account his age, changing conditions of life, etc., that he is to be regarded as mentally unbalanced. There must be, however, a time element, so to speak, for neither temporary departure from normal mentality nor sudden impulse, alone, constitutes insanity. One cannot, of course, be considered insane when, on account of some temporarily operating influences, his mental faculties are perverted, in abeyance, or do not, for a brief period, act as well as usual. For instance, one in a state of violent anger or under the temporary effects of alcohol or other narcotic, or in a transitory

*Read before the South Piedmont Medical Association, at Lynchburg, Va., April 18, 1911.

febrile delirium, or during an epileptic seizure or an hysterical attack, is not insane. The line of demarcation between functional neuroses, accompanied by vague psychical symptoms, psychasthenia, and the like, is a broad question, the discussion of which in a short paper would only cause confusion, therefore we had better omit from consideration these conditions, though such disturbances sometimes develop or proceed to such an advanced stage as to reach the boundary line of a psychosis. We exclude also those subjects that reveal a congenital or an inherent defect of mental development, such as idiots and imbeciles.

In well-nigh every case of insanity there are recognizable warnings, consisting of physical, mental and moral changes, which foretell the coming mental illness or breakdown. Such premonitions vary in their number, order, intensity and duration. Instead of depending upon any one or two or a few indications for a diagnosis, we should consider the entire clinical picture and give a fair interpretation of the significance of each symptom, as well as of the entire group of symptoms—the symptom-complex—allowing due consideration for the patient's personality, age, social condition, environment, occupation, training, educational requirements, etc. The examination of a patient, who is alleged to have mental derangement, is beset with difficulties not encountered in a sane patient, consequently, no hard and fast rules or routine methods can be followed, yet it is serviceable to have in mind some fairly definite plan of procedure. Much depends upon the physician's tact and his knowledge of mental symptoms and his diagnostic resources. In the outset, get from some intelligent person or member of the family a detailed account of the changes and symptoms that have been observed from the first indication of departure from the normal up to the time of the examination. Ascertain what has been the patient's general state of health, and, especially whether he has been an alcoholic or a drug habitue, has had syphilis or other constitutional diseases, and if he has any idiosyncracies, intemperate or immoral habits; and, furthermore, look into his environment and domestic relations. Inquiry should, of course, be made as to the existence of insanity, epilepsy or other neuroses or alcoholism in the family.

In the mental examination of the patient, first endeavor to get him to give, in his own

way, assisted occasionally by a question or a nod of the head, a spontaneous account of his illness, his feelings, etc. Of course, if the patient is stuporous, obstinate, reticent or too much disturbed to give such an account, we must depend largely upon his general appearance, attitudes, facial expression; and in every case conduct both at and prior to the examination should be the main basis of diagnosis. In any event, one can tell from general observation whether the prevailing affective tone is one of exhilaration or depression. Indeed, in some cases a diagnosis can be made at sight.

Proceeding in detail with the examination, we should test the patient's disturbance of attention—that is, whether there is retardation, blunting, suppression, acuteness, etc., of this faculty. Disorientation, that is, an inability to clearly comprehend one's relation to time, place or persons, should be looked for. The memory should be tested as to whether it is faulty regarding recent or remote events, or both, or defective in other respects. Disturbance of apprehension and clouding of consciousness is an abnormal condition that is symptomatic of mental aberration. The patient fails to take in his surroundings or recognize his relation thereto, that is, he is unable to grasp the facts of the environment, or is in a befogged state in which "external and internal stimuli do not create clear presentations." The existence of illusions and hallucinations is another disturbance of the process of perception that should be cleared up; and the prevalence and nature of delusions, fixed ideas and obsessions, are disorders of the content of thought that should also be ascertained. The patient's manner of speech, train of thought, flight of ideas, difficulty of thinking, retardation, desultoriness, and grasp of school knowledge or every-day information, ability to calculate, understand what he reads or is read to him, and the like, constitute important features in the examination. What and how the patient writes is also of material aid in the diagnosis. It should be noted whether the patient has insight into his condition and whether morbid emotions, disturbance of the feelings, impulses, disorder of the will, mannerisms, peculiar manner, etc., exist.

The physical examination should be conducted much after the order of that which is followed in an ordinary medical case. One writer gives the gist of the

matter when he says: "Mental disorders are largely physical diseases, which are manifest, in part, by conspicuous mental symptoms"—that "insanity is, in most instances, only one of the symptoms of a condition of ill health." Among the many bodily disturbances, functional or organic, are constipation, coated tongue, pain or feeling of pressure about the head, vertigo, gastric troubles, anorexia, impaired nutrition, weakness, loss of flesh, circulatory changes, uncomfortable sensations about the heart, vasomotor disturbances, tremors, pupillary changes, defective speech, insomnia, and so on. Frequently there are evidences of toxemia, following abeyance of function. There may be a chronic heart, kidney, liver, stomach or intestinal diseases, or perhaps hookworm disease, or organic brain lesion, upon which the mental symptoms depend; or there may be a pelvic disease, tuberculosis, cancer, syphilis, arteriosclerosis, or other pathological conditions which bear a causative relation to the insanity; or physical and mental disease may incidentally co-exist, one aggravating or increasing the intensity of the other.

In our present state of knowledge there is no classification of mental disease that does not present many imperfections, but for practical clinical study and proper treatment, and with the view of giving a fairly accurate prognosis, psychiatrists have attempted to separate cases into one group or another, basing this differentiation partly on etiological, partly on pathological, and partly on symptomatological grounds. Quite a number of cases can be grouped, though there are others that are difficult to classify. Difficulty of classification is confronted particularly in the incipient stages. There is a good deal in what Dr. J. Montgomery Mosher, one of the editors of the *American Journal of Insanity*, says about the nosology of mental diseases. He writes that, "In the practice of today it is not at all improbable that the personality of the patient is overlooked in the effort to bring him into one or the other of the categories which constitute a 'classification,' often a collection of fantastic words of passing acceptance—the opprobrium of modern psychiatry."

In order that one may the better grasp in a general way the more common mental symptoms, both in the incubation and developed stages of the various forms of insanity, according to the generally adopted classification of the present

day, permit me to present some clinical pictures, rather incomplete though they may be, representing these several types: In his rounds of practice the physician sometimes sees a patient, a mother, perhaps, with the carking cares and monotonous drudgery incident to the care of a large family of children, or a woman going through the climacteric period, or a business man perplexed and worried over financial failures, or a rest-broken professional man whose powers of endurance have been taxed beyond his strength, who may exhibit several of such symptoms as the following: A feeling of fatigue, difficulty of thinking, dearth of ideas, self-absorption, dejection, a sense of personal unworthiness, loss of confidence, an indefinite feeling of ill-being or of impending evil, disposition to magnify trifles, an inner anxiety, reduced capacity for mental application, morbid emotion, aversion to company, and, perhaps, thoughts of suicide. The facial expression is sad and indicates mental pain and a generally depressed feeling. The handshake is characterized by a lack of cordiality—it is timid and hesitating; there is more or less rigidity in the limbs, this being more marked towards the trunk, and the larger joints are somewhat flexed. These symptoms indicate *melancholia*.

Another case, perhaps a young man or woman who, under the exactions of social life, has been leading a rather irregular existence, or has abused or neglected the normal bodily functions, and the nervous resistance has been undermined, comes to our attention in an entirely different mental attitude. We observe a restlessness, a feeling of unusual elation or exhilaration, buoyancy of spirits, a sense of unnatural well-being, a cheerful frame of mind, pressure of activity, over-confidence, acceleration of the train of thought, rambling, incoherent talk, flight of ideas, changing emotions, impulsiveness, sometimes sudden outbreaks of anger without sufficient cause, and again levity, profanity, or even vulgarity, or violent excitement and destructiveness. The usual brightness of the facial expression and frequent laughter indicate just the opposite to mental pain. The handshake usually indicates gladness and cordiality, and the entire arm is involved. Here we have a case of *acute mania*. Or there may be in a given case mixed features—an alternating state of depression and elation, with sometimes a partial or complete remission of mental symptoms, constituting a cycle, so to speak,

which recurs with more or less regularity. Such a combination of symptoms is called *manic depressive insanity*.

You get a hurried call to see a patient who is reported "violently crazy." It may be a man who has been subjected to a terrific and continuous mental strain without sufficient sleep or rest or food, or has had some sudden emotional shock, or undergone prolonged privation, or a woman in the puerperal state, or a post-operative surgical case. While there has been some insidious physical and mental change, such as nervousness, insomnia, loss of appetite, irritability, depression and confusion, there is rather sudden appearance of such symptoms as marked motor restlessness, distractability, clouding of consciousness, transitory and quickly changing emotional attitudes, inability to sleep, nightmares, extreme volubility, singing, muttering, refusal of food, untidiness, fleeting illusions, hallucinations and delusions, defective memory, disorientation, delirium and collapse. We would label these syndromes, *acute confusional insanity* or *exhaustion psychosis*.

Another individual, who has been somewhat erratic all his life, becomes more peculiar, sensitive and distrustful, usually as he approaches middle life. He grows decidedly discontented and complains, without cause, of ill-treatment, is suspicious and imagines that people are talking about him, and that he is being watched or plotted against; is possessed by visionary and absurd ideas, and may concoct schemes which he does not carry out; his ethical sense becomes perverted, though there is no intellectual deterioration. His feeling of self-importance is exaggerated. Hallucinations develop, and delusions of persecution, or of poisoning, or of personal superiority, more or less fixed and persistent, dominate him. There is finally a gradual elaboration of a system of delusions, to which he sometimes reacts, making him, therefore, a dangerous element in society. Such a case is one of *paranoia*.

There is another class of mental cases that frequently come in the purview of the family physician. A girl or a boy about the age of puberty is usually the unfortunate victim. Mental change and deterioration come about insidiously. The youth loses his normal mental vivacity and physical alertness, and becomes shy, reserved, apathetic, seclusive, dull and inactive, and no longer cares for play and companionship. He loses interest in his work or

his studies, cannot concentrate his wandering thoughts, or apply himself to his daily tasks. Repulsive habits may complicate the case. He may be untidy and careless in his personal habits, or else silly vanity asserts itself in odd or fantastic dress. Hallucinations of the various senses make their appearance, and absurd witticisms, senseless expressions, meaningless laughter, peculiar mannerisms, blunted or perverted emotions, negativism, constrained and odd attitudes, and various delusions, frequently of a sexual character, may add to the gravity of the condition. Finally dementia is likely to mark the individual for the rest of life. *Dementia præcox*, in one or other of its forms, would be the diagnosis of such a case.

Another patient, an adult, may almost imperceptibly reveal symptoms of mental and physical deterioration, such as faulty memory, neglect of personal appearance, indifference to environment, clouded consciousness, disorientation, failure of insight, and loss of the usual sense of duty. There follow emotional indifference or disturbance, confusion of thought, progressive mental impoverishment, impairment of judgment, weakness of will power, expansive, grandiose, unstable, transitory and unsystematized delusions, and finally, within a comparatively short time, profound dementia. Trembling of the tongue and facial muscles, disturbance of the pupils, such as change in outline or light reflex, Argyle-Robertson pupil, abnormality of the knee-jerk, hesitating, scanning speech, stumbling gait, slowness in writing and abnormalities in the hand-writing, are among the physical manifestations. Epileptiform or apoplectiform convulsions sometimes occur in the course of the disease. A history of syphilis, often complicated with dissipated habits, is usually the forerunner of this grave constitutional condition known as *paresis*, or *general paralysis of the insane*. Closely allied in the clinical aspects to the foregoing class are the psychoses associated with, or resulting from, gross organic brain disease, such as focal or diffuse lesions, arteriosclerosis, hemorrhage, embolism, tumors or trauma. These are classed as *organic insanities*. Then we have the *senile psychosis* or *dementia* characterized by a gradual "recession of memory into the past, and of all capacity to receive impressions of current events, the brain undergoing a process of evolution."

There are two other groups of cases the

clinical manifestations of which are more or less alike in many particulars, yet with some differences. Following various fevers and other infections, a psychosis, with distinctive symptoms and course develops, known as an *infection psychosis*. As a sequel or the effects of prolonged alcoholic and drug addiction upon the brain cells, another class of mental disease develops which is known as *intoxication* or *drug psychosis*. These two types of mental aberration owe their origin to toxic substances, developing, on the one hand, in the body, and, on the other, to those taken from without. There are confusion and retardation of thought, motor restlessness, dreamy states, sometimes depression, and at other times marked excitement and loss of self-control, irritability, indifference, insomnia, defective memory and association processes, loss of the ethical sense and the higher moral feelings; diminished capacity for mental effort and of manual labor, faulty judgment, progressive mental enfeeblement and frequently delusional states. Along with the mental disturbances come physical debility and various nervous manifestations.

Now, in the treatment of insanity, our greatest opportunity for success is, of course, with the incipients. Delay of treatment, especially in the curable cases, is decidedly prejudicial to good results. As a matter of fact, few cases of insanity are curable except in the early stages. In quite a large proportion of cases there are such gross pathological lesions, or the brain has been so profoundly affected, that they run their course to a fatal termination, in spite of any form of care and treatment. If we would follow the worthy example of the modern surgeon, who, when he recognizes that appendicitis, for example, exists, operates without delay, we would restore to mental health a much larger number of cases of insanity than we usually do. Many difficulties, it is true, attend the treatment of insane cases at home, but if the surroundings are satisfactory, and the necessary measures of physical relief can be properly carried out and all the rules that ordinarily prevail in the treatment of other diseases, can be followed, quite a number of acute cases could be successfully treated at home. But it is a waste of valuable time to attempt to treat violently disturbed, or turbulent, or complicated cases, and certain types known to be incurable, except in a special hospital under the supervision of a competent alienist and trained mental

nurses. Difficulties in the way of home treatment exist, especially in cases occurring in families of the poor or persons living in crowded quarters. Therefore, in determining whether or not a given case can or should be treated at home, consider well the nature and intensity of the mental symptoms, as well as the physical condition of the patient, and also the environment, financial status, and the intelligence and the willingness of those who have the responsibility of care and nursing. Each case must be a law unto itself as to what course should be pursued. For instance, it would be cruel irony to advise a poor man, upon whose daily labor the support of a family depends, to take a prolonged rest cure, or to employ a trained nurse, or the professional services of a competent alienist, except for a brief time.

There are some general considerations, with modifications and variations, that apply to practically all cases in the early or incipient stages. Every ascertainable cause of the patient's illness, whether it be in his physical condition, his habits, his method of living, or his environment, should be removed as far as practicable. The overworked shop-girl, the factory hand, or the manual laborer, should be induced to shorten the hours of work and take more rest and diversion. Stress and strain and sources of anxiety should in every case be removed or at least be lessened. A short respite from harassing cares and a slacking of the tension incident to a life of intense intellectual effort, or of business worries, often restores a normal mentality within a comparatively short time. If one is leading an irregular or dissolute existence, his or her habits and methods of living should be made to conform to the more rational. Much significance should be attached to rules of mental hygiene, and the avoidance of morbid and unhygienic habits of thought. As Dr. M. S. Gregory, of the Psychopathic Wards, at Bellevue Hospital, New York, says, "It is not enough to merely consider the individual and his mental make-up, but the treatment must, also, include the regulation of his mental life at home and in his business surroundings. The correction of trivial misunderstandings in the family life, and the home attitude towards the patient and his illness, or a complete removal of the patient from his former surroundings, if necessary, may frequently be sufficient to prevent a serious breakdown in a neuropathic individual." If a promising and

perhaps precocious girl is on the way to mental deterioration, brought about by a severe school curriculum out of proportion to her physical and mental strength, she should be taken from school, all her functions regulated, required to rest and then given some light open-air work about the garden, for instance, and provided opportunity for play and healthful diversion.

As insanity is an "abnormal manifestation of the mind due to a pathological condition of the nervous system," the most rational therapeutic treatment is to be found in the restoration of the normal physiological functions of the nervous system. The sufferer from mental disease should be treated medically as any other sick person. We should not resort to excessive or injudicious medication. There is no specific for insanity, consequently, disorders of the various organs and existing physical diseases are to be treated in no different manner from those found in the sane. Toxic conditions should be remedied and reconstructive medication and a generous dietary followed out. The gastrointestinal tract needs special attention. Constipation should be relieved by means of laxatives or mild cathartics, or salines, and an occasional enema. The kidneys should be kept in good condition by the use of ample quantity of water and diuretics, and a torpid liver relieved by an occasional mercurial or other suitable drug. In some cases prolonged rest in bed, and in others out-door diversion and employment constitute therapeutic essentials. In every case an abundance of nutritious and easily digested food is of prime importance. Hydrotherapy should constitute an important factor in the treatment for its healthful effect on the skin and its sedative influence on the nervous system. Insomnia and mental disturbance or excitement frequently require attention. Prolonged warm baths or packs or the drip-sheet will usually produce quietude and sleep. If hypnotics or sedatives must be used, use them cautiously and discontinue them as soon as possible. Among the best and least harmful agents of this class are the bromides, paraldehyde, sulfonal, trional, and veronal. Frequently sleep-producing drugs, especially chloral, hyoscyne, and the bromides, by their cumulative effects, produce a toxic condition, thereby doing more harm than good. Do not give any sedative or hypnotic except as the last resort. In exhaustive states or collapse, saline infusion is particularly valuable. Arsenic, iron, the hypo-

phosphites, and various other reconstructive agents, serve an excellent purpose in a good many cases, especially if there is anemia. The treatment generally should aim to assist and not to retard nature in her restorative efforts. Finally, the reassuring influence of the physician and the cheerful and helpful co-operation of the family and friends is a form of psychic therapeutics that should be utilized as far as is consistent in the treatment and management of all mental cases. Bodily restraints should be universally condemned. The personality of the patient should never be overlooked.

There remain a few general suggestions and observations that I should like to make:

1. For the reason that almost every case of mental alienation comes first to the notice of the family physician, he occupies an especially advantageous position for the study and detection of the earliest signs of departure from normal health and, consequently, rendering the most effective relief. His field of useful activity is greater still, in that he has better opportunities than any one else to bring into operation the best measures of prevention or prophylaxis. Therefore, he should have at least a fair knowledge of psychiatry. Every medical student should be given an opportunity for clinical instruction in mental diseases, which would result in the profession earlier recognizing incipient cases. Mental cases are too often treated by physicians who have had little or no experience in dealing with them, and the patient is the loser thereby. Since the alienist does not usually see the patient until he is actually insane, there should be a closer relation between him and the general practitioner, in order that treatment and care may conform to the most modern and advanced methods, and thereby be more effective. The success of psychiatry depends largely upon the interest taken in it by the general practitioner and the co-operation between him and the psychiatrist.

2. There need to be out-door departments at the State hospitals for the gratuitous professional advice to persons suffering from premonitory mental symptoms, or in the incipient or curable stages of insanity, and provision for the voluntary commitment of acute cases, thereby removing the "stigma" which attaches to a judicial commitment. There should also be in connection with some of the general hospitals in the larger cities, psychopathic or observation wards under the care of skilled specialists and

trained mental nurses, for the care and treatment of certain cases of threatened insanity or incipient or transitory mental disturbance, to be admitted without legal formality. Such forward steps would mean much from social considerations after recovery, which is very important to the patient.

3. The management and control of insane persons pending their transfer to a hospital should be taken out of the hands of jail and police authorities and placed under the jurisdiction of authorized medical agents or the boards of health. It is simply inhuman, as well as disastrous to the welfare of an insane man—a mentally sick man—to confine him like a criminal in a jail. In no other form of disease would such neglect and brutal treatment be tolerated, then why should the insane be made to thus suffer?

4. There should be associations throughout the State to look after patients that have been paroled or discharged from the institutions for the insane. This would furnish an opportunity to become more conversant with conditions under which the mental disorder developed, "with the possibility of an adjustment before the patient returns, so that such help or guidance as may be advantageous to the patient and to his friends on his return from the hospital may be extended." [Meyers.]

5. There should be a general educational movement engaged in by physicians, school-teachers, clergymen, editors and leaders in social betterment, for the purpose of informing the people regarding the relation of heredity, alcohol, venereal diseases, ill-health, poverty, vagrancy, unhealthy environment, overstrain, bad mental habits, too hard school curriculum, etc., to insanity and degeneracy. Such an educational campaign, under the leadership of the medical profession, would disseminate knowledge regarding causes, prevention, management and treatment of insanity that would accomplish results beyond our most sanguine expectations.

NEURITIS.*

By MARK W. PEYSER, M. D., Richmond, Va.
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This subject has been selected for to-night's discussion because the disease is quite common;

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is too often treated slightly; and because chronicity is not the exception, not to mention deformities and recurrences, unless the causative factor be removed. It is, therefore, imperative that the cause be discovered as the initial step toward recovery.

Vigorous measures are to be deplored at the onset of the disease; rather, should be used sedatives, hot baths, mild massage and galvanic electrification with, perhaps, the static brush from wood electrodes. Later, deep massage, mechanical vibration, faradic and varieties of the high frequency and static modalities may be profitably employed.

Pain in the early stage may be relieved by the coal-tar derivatives or codeine. Morphine should be cautiously, if at all, administered. Galvanism is potent in this direction; and moist, hot applications or hot baths to the part are of benefit.

Some symptoms and signs will be noted in the report of cases; a full discourse upon these, etiology, etc., are text-book matters.

Case I.—Facial Palsy.—W. W. H., New York, aged 30 years, referred by Dr. W. A. Merchant. Previous history was negative. The patient had been exposed while on an outing, a double facial paralysis, which is rather rare, resulting. He was seen within a few days after onset of the trouble, and as response to the faradic current was not wanting and there was little or no pain or tenderness, this modality was employed in treatment. Five applications at daily intervals sufficed to place the patient well on the way to recovery; and as he was obliged to return to New York, he was instructed to continue treatment, which resulted in cure.

Usually, only galvanization is recommended in facial neuritis; but as the inflammation did not seem to be of high grade and the reaction of degeneration was slight, faradization was used. The patient was told to consult a physician at home, but did not find it necessary.

Sciatic Neuritis. It is stated that persistent pain confined to the region of the great sciatic nerve and its distribution, with tenderness in the nerve trunk, is almost always due to neuritis; and that sciatic neuralgia is a rare affection.

Case II.—Miss G., aged 50 years, shopkeeper. The patient was about 4 feet in height; weighed over 200 pounds, and had been afflicted when I first saw her, about six months, during which

period she had been under the care of two other physicians at different times, but without benefit.

By a process of exclusion the condition was found to be due to compression of the nerve, the patient being in the habit of sitting on the edge of what was to her, a high stool, the toes barely reaching the floor. The pain in this case was so severe that resort had to be had in two or three instances to morphine to still the paroxysms and overcome the cramps. Antipyrine proved to be the best of the coal-tar derivatives at other times. Walking, standing or even sitting up in a cushioned chair while the bed was being prepared, produced pain, and the weight of the sheet was, at times, unbearable.

The case being a fairly old one and other measures having failed, active physical therapy was instituted; but it was found that the faradic current, sparks, wave and high frequency currents not only increased the pain at the time of application, but that they made the condition worse. It is known, however, that vigorous pressure over the nerve at its maximal points while similarly productive of intense suffering during administration, results in subsequent relief.

In this case, the modalities named were given a trial for about a month with no other effect than that stated. A period of nearly two weeks elapsed for the proper current to be installed in the patient's house when mechanical vibration was begun. Relief was evident after the first few treatments and by the end of the second month the patient was able to be up and about. There has been no return of the neuritis up to this time—a year and a half since completion of the course; but I am told that the other leg gives premonitions, due to the same cause.

Heavy pressure was made over the painful points, the object being to produce inhibition. Medium or light pressure would have resulted in increasing the pain as they are stimulating. These facts should be borne in mind in vibrating the spine.

We now come to *multiple neuritis* with its various symptoms, sensory and motor, at times demonstrating spinal and higher central involvement, though chiefly showing peripheral disturbance. The toxemia, whatever its origin, is systemic, and it must be our endeavor to discover the etiologic factor in the beginning if we would give the patient the fairest chance.

This cannot be reiterated too often. Lead and alcohol are the commonest causes; infectious diseases and autotoxemia from nephritis, diabetes and intestinal disturbances are not to be overlooked.

Recovery may be predicated if the cause can be removed, though its nature must be taken into consideration, as well as its intensity, the length of time through which it has acted and the condition of the patient. Autotoxemia as a result of bowel disturbance usually produces a chronic condition difficult to overcome.

Case III.—Miss X., aged 70 years, remarkably vigorous, mentally and physically, up to the time of attack which began with paresthesiae of the fingers, gradually involving the upper and lower extremities, till now, three or four years after inception, the patient is bedridden, with foot-drop, legs flexed on thighs and thighs on abdomen. The index fingers and thumbs can be opposed, but there is much clumsiness in the action which requires the strongest effort of the will. Pain comes in paroxysms and she lies in the position described without the power to move body or limbs. At times there is incontinence of the bowels and bladder. Amnesia and delirium have been present several times, and aphasia has been as marked as in some cases of cerebral apoplexy.

I first saw the patient about two years after incipency, when there was marked clumsiness in all of her movements, and the walk was of the peculiar steppage character.

High frequency and wave currents, sparks and brush discharge were administered over a period of nearly a year, but the only effect, so far as could be seen, was retardation of the progress of the disease. Medicinal and dietary measures, and massage had been previously and during my care, faithfully used, but the onward march of the malady was not staid. Uric acid was said to be the cause.

Case IV.—M. R., aged 30 years, of healthy appearance; previous history negative. This patient, in the latter part of the summer of 1910, consulted his employer's physician for pain in both sides of the neck and right arm. Two weeks previous to his first consulting me, the physician referred him to Dr. G. A. Ezekiel who, at the end of that time, January 24, 1911, referred him to me. This patient stated that his pains were general and so severe as to prevent sleep. He could not sit near the fire be-

cause of the discomfort produced, and when seated at a distance from it, he was just as uncomfortable. Weakness of the muscles had begun two weeks previous. At this visit, the head was drawn to the left and there was complete paralysis of the right upper extremity except that the shoulder could be shrugged. Step-page gait was marked in the lower extremity of the same side; while both extremities of the left side were affected to quite an extent. Response to the faradic current had disappeared in the right upper extremity and reaction of degeneration was present. Romberg's symptom was absent; the tendon reflexes diminished. The urine was normal; the bowels constipated.

The patient was a man-of-all-work in a confectionary store, freezing cream, shaving ice, carrying freezers, etc., and often working with his shoes and socks damp; and the only cause for the condition that could be advanced was continued exposure to this dampness and cold.

Treatment was begun on January 25th, the galvanic current being applied and interrupted slowly during the last five minutes of the sitting; and this was kept up until February 14th, when there was voluntary motion of the right index and middle fingers at the metacarpus, the thumb having had slight motion for a week or more previous. In the meantime, pain had disappeared and sleep was sound. The patient volunteered the statement that his "arm did not hang so heavy, he could move his head better and his side felt more limber." On February 16th, the fore-arm could be slightly flexed. On February 20th, the normal formula was in evidence. On February 24th, faradization was instituted, and on the 26th, the thumb and first two fingers could be opposed. Since then, there has been continued gradual improvement. The upper extremity can be raised over the head; rotation, supination and pronation are possible and there is a slight grasp in the fingers, which, however, cannot yet be flexed at the last phalangeal articulations. The hand is still somewhat edematous. Gait has improved, the weight can be borne to some extent on the left leg, and all pain and paresthesiæ have disappeared. The last five or six sittings have been devoted to auto-condensation.

Massage, passive movements, hot baths, strychnine, and measures for keeping bowels and kidneys active were used concomitantly;

and proper clothing and hygiene prescribed. The patient has been a most tractable one; and I feel sure that in two months he will have completely recovered.

In closing, I wish to acknowledge the aid I have derived from Church and Peterson's work on Nervous and Mental Diseases.

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THE URETERAL CATHETER.*

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Drs. Squier and Bugbee in their manual of Cystoscopy state the following:

"The history of the development of the cystoscope is one of interest, and dates its birth over a century ago (1807) when Bozzini, of Frankfort, first attempted to examine the interior of the bladder by means of a metal tube, using a candle and reflector as the illuminating power.

"In 1867, Bruck, of Breslau, introduced 'stomatoscopy' examination of the body cavities by means of a glowing platinum loop.

"Nitze, acting upon this, produced a cystoscope ten years later, using a platinum wire carried into the bladder and heated to whiteness for the source of light, and a system of lenses to aid examination. This instrument was the real parent to the modern cystoscope.

"A few years later Edison produced the incandescent lamp, and in 1883 it was first applied to the cystoscope by Newman.

"Although the cystoscope was primarily designed to be used as an examining instrument only, the great possibility of differentiating the urine of either kidney was soon recognized, and resulted in having means for catheterization of the ureters incorporated in the early instruments of Boisseau du Richer and Brenner in 1888."

At the present time there are many satisfactory instruments upon the market, simple cystoscopes being made in sizes as small as 14 F. This size may be readily introduced into the female bladder of almost any age and into male patients over 10 or 12.

The catheterizing cystoscope is necessarily large, since it must carry tunnels for the catheters. The writer has seen no satisfactory double catheterizing cystoscope under 22 F.

*Read before the South Piedmont Medical Society at Lynchburg, Va., April 18, 1911.

Some operators prefer the direct and some the indirect fields of vision. The indirect requires more practice to handle, since the field and images are reversed, but gives a larger objective and permits of an angulation of the catheter by means of a blade which at times, such as in hypertrophy of the prostate, cystocele, etc., allows the ureteral os to be entered, which, under co-existing conditions, would be well-nigh impossible with the instrument of direct vision.

The indirect instrument is constructed upon a system of prisms, and the object viewed being at right angles to the line of vision, mechanically then, the *bas-fond* and the ureteral mouths should be readily seen regardless of the degree of prostatic hypertrophy or vesical procidentia.

The writer prefers the indirect instrument and uses it exclusively.

With the patient in a comfortable lithotomy position and the parts thoroughly cleansed, with the urethra of sufficient size to admit the instrument, the bladder is now ready for catheterization. In instances of pronounced cystitis, in the contracted, small, cricket-ball bladder, containing only 2 to 4 ounces, in instances of severe pyelitis, when the medium cannot be made clear, catheterization of the ureters is a most difficult and at times impossible procedure.

In the usual run of cases, however, particularly in the female, when the bladder holds six or more ounces and the medium is clear, segregation of the urine or pelvic lavage is a simple and easily accomplished act.

In hypersensitive urethrae and bladders, alypin or cocaine may be used locally; if necessary a general anæsthetic is administered. In a series of several hundred cases, the writer has had to adopt the latter only once or twice.

The cystoscope should not be boiled as the cement holding the lens gives way. It should be thoroughly scrubbed in warm water with green soap, then immersed in carbolic acid solution, 1 to 40, in which it is left for twenty minutes, then rinsed off in sterile water, when it is ready for use. The catheters are delicate and should be respected as such, their sterile preparation requiring tenderness. Formaldehyde gas is a successful, but expensive and obnoxious method. They are best sterilized by washing with green soap and warm water, boiling in plain water for one and a half to

two minutes, and then plunged in a cold boric acid solution of 1 to 500 argentic nitrate solution. The bladder is now filled with a coolish or tepid sterile solution (as it is surprising how rapidly the little lamp can heat the medium) and the process of cystoscopy or catheterization of the ureters is ready to be carried out.

It may be well to review hurriedly the anatomy. The male bladder contains about 150 c.c. and the female 200 to 300. The ureteral mouth can in almost every instance be readily located. The instrument is inserted one or one and a quarter inches beyond the internal sphincter, then swinging it about the middle line as an axis, one mouth is located, rotating the instrument in the other direction should easily locate the opposite os. At times this is difficult, particularly when there are trabeculae present, which obscure the mouth, or, when the os is at the bottom of a recess, or on the posterior wall of a well-defined muscular bundle. In very difficult instances, indigo-carmin or methylene blue may be given, the discoloration of the urine acting as a landmark for the opening. The normal ureteral mouth is usually a concentric slit upon the summit of a papilla, although many forms and shapes may be noted—the impress of a horse's foot, the letter "U," a pouting eminence, a crescent, half moon—all have been fancied to the vesical outlet of the ureter.

In those instances when a pyelitis or a tuberculous kidney is suspected, the intense radiating congestion of the vesical blood vessels about the ureteral mouth may be used as a landmark to assist in locating it.

In that type of the ureteral mouth which is everted, crater-like, pouting, edematous, stone may be very justifiably suspected, particularly if coupled with other clues.

The writer has seen no mouth that would not receive a number 5 F. catheter, and more recently a number 8 F. has been used; this allows of a better flow both in and out, and in selected instances should be used. The insertion of an ureteral catheter of this size is not painful, and may be likened to the discomfort of an urethral sound crowding its way through the external cut-off muscle.

The use of the ureteral catheter may be divided into: 1. Diagnostic; 2. Surgical.

DIAGNOSTIC USE OF URETERAL CATHETER.

Formerly, to segregate the urine, digital com-

pression on the ureter was performed by either rectal, vaginal or abdominal routes. Later on, a supra-pubic or perineal section was performed, when the ureter was located and compressed. Also, there have been instances of laparotomies performed, in which the ureter was sought and temporarily tied to give the outflow from the other kidney. All these methods were too severe and serious or indeterminate to warrant their execution. Now, by means of the catheter the segregation is perfected. The functioning capacity of the kidney can be determined by phloridzin (producing a temporary glycosuria), methylene blue or indigo-carmin, or has been brought out by Geraghty and Rowntree with phenosulphonephthalein. This latter seems to be the best method of all to estimate the potentiality of the organ. In instances of advanced Bright's, when Edebohl's operation would be indicated, the side best suited for stripping is rapidly determined by this method; for Bright's disease is not infrequently unilateral, and without the ureteral catheter it would be difficult indeed to determine upon which side to operate. Unilateral or bilateral pyelitis, pyelonephritis, and pyelonephrosis may be accurately ascertained by the use of the catheter.

By injecting a staining solution, which is retained, into the ureter and pelvis of the kidney, while an X-ray picture is taken, the rim, actual outline of the pelvis and ureter, their normal anatomical shape, positions, and relationship are readily identified and established. This must be of diagnostic value in suspected ren mobilis, hydronephrosis, hypernephroma, tumors of the kidney as well as in pyelonephrosis and stone in the kidney. The ureter, too, may show an unevenness of its calibre, pouching, sacculation, stenosis (congenital or acquired), or diverticula. In the presence of stone, there will be a varying consistency in the depth of the shadow, and proximal to the stone there is a pouching, for this obtains in all stenoses of mucous tubes. This, according to Braasch, of Rochester, Minn., is most significant, and worthy of more consideration as a positive diagnostic measure for stone in the ureter than the leaded catheter showing upon the plate tangent to the shadow. Collargol in 10 per cent. solution or argyrol in 25 per cent. solution may be used. Furthermore, suspicious abdominal shadows, such as sesamoid

bones in the tendon of the obturator internus, appendoliths, enteroliths, phleboliths, or calcified glands can be differentiated from stone in the ureter by the X-ray picture of the styletted or leaded catheter, for the alignment of the ureter is now definite and can be readily brought out.

SURGICAL USE OF URETERAL CATHETER.

I. *Lavage*.—In instances of chronic pyelitis (or even in the subacute type) the writer has had the opportunity to witness some very gratifying and encouraging results from the direct local application of solutions to the inflamed and congested area. This is surely based upon surgical principles.

Drainage and antisepsis are taught us in our medical courses from the dissecting hall to the operating table, "For it is not the *uninfected* which always happens."

In milder cases, the pelvis may be washed out with normal salt solution or boric acid. In the more severe, the writer has used protargol and argyrol up to 20 per cent. These solutions are injected boldly, to the point of bringing on a Dietl's crisis or renal colic; the pressure is then released and the flow allowed to return.

To offer an illustration: November 9, 1910. Mrs. W., aged 23, married, one child 6 months old. Referred by Dr. L. F. Hansbrough, Front Royal, Va. For two years has had frequency of urination every two hours by night and every hour by day; some pain in the bladder region. Sent in with the diagnosis of stone. X-ray is negative; urinalysis indicates pyelitis. Right ureteral mouth congested, radiant; left mouth and bladder normal.

November 16—Right pelvis irrigated with boric acid solution and argyrol 10 per cent.

November 18—Intervals of urination longer; feels better.

November 23—Pelvic lavage, argyrol 20 per cent.

November 28—Pelvic lavage, argyrol 20 per cent.

December 2—Pelvic lavage, argyrol 20 per cent.

December 5—Now retains urine five hours by night and three hours by day.

December 10—Pelvic lavage.

December 16—Pelvic lavage. Patient allowed to go home. Retains urine all night and four to six hours by day.

March 6, 1911.—A letter stating she is well

and has had no trouble since leaving the hospital.

II. *Renal Apoplexy*.—In selected cases of renal hemorrhage from the pelvis or papillæ, direct application of suitable medicines would seem to be indicated. This type of hemorrhage must not be confounded with parenchymatous disease, for in this latter, pelvic lavage can certainly have but little if any benefit at all.

To illustrate: February 20, 1910. E. J., aged 40, married. Referred by Dr. J. G. Nelson. Two years ago noticed blood in the urine, which continued for several weeks, then cleared up until January 10, 1910, when it again began staining the urine, until February 20th, when she was put under observation in the hospital.

A rather small anæmic woman; at each act the urine is markedly discolored with blood; no clots.

Cystoscopy: *Right os* shows whirlpools of blood emitting. Urinalysis ac. albumen two grams per litre; no pus, crystals or casts. Blood forms bulk of sediment. *Left os* ac. albumen eight-tenths grams per litre; no pus, crystals, or casts. Some red blood corpuscles.

March 10.—*Right ureter* catheterized and pelvis irrigated with warm boric acid solution and adrenalin. Return flow promptly clears up.

March 11.—Left pelvis irrigated with adrenalin.

March 14.—Right pelvic lavage. The urine not so much discolored as formerly.

March 17.—Patient put on cypridol, and right pelvis irrigated with adrenalin and bichloride solution.

March 20.—Slightest tinge to the urine.

March 24 and 30.—Right lavage with adrenalin and bichloride.

April 7.—Has had no loss of blood now for eight days. Urinalysis negative.

April 12, 1910.—Patient goes home.

March, 1911.—States that she has noticed no blood since leaving the hospital last year, and is enjoying excellent health.

III. *Pelvic Tuberculosis and Calculi*.—What the future holds in store for local medication to tuberculous ulcers would at the present writing be a little hasty to predict, as would also solvents for stone. This theoretical use for the ureteral catheter may, however, be mentioned here.

IV. *Stricture of Ureter*.—By gradual dila-

tation, stenoses (congenital or acquired) should be considerably benefited. For the ureter, receiving only a lineal mesenteric attachment, lying extra-peritoneally, and in the lower part of its excursion running behind organs which are in constant danger of infection, spelling adhesions and cellular fibrosis, there are, at unrecognized intervals, insults calculated to restrict its calibre or embarrass its physiologic activity. This obtains particularly in women.

Bottomley has shown in an exhaustive article that stricture of the ureter is not an uncommon occurrence.

There are three normal physiological contractions of the ureter: 1. At the lower pole of the pelvis. 2. Where this tube crosses the iliac artery. 3. Its vesical mouth. It would appear to be in the lower segment of the ureter that strictures more frequently occur.

As an illustration: February 10, 1910.—Mrs. G., aged 30, married. For several years has had frequent and painful urination, dating from the birth of her first child. Recently, the calls have been so frequent that her rest has been seriously disturbed. There is, at times, some pain under the right ribs, which seems to be at its worse when the calls are most numerous. Ureteral stone is suspected. X-ray negative. Urinalysis negative, some epithelium. Left ureter easily catheterized. Right ureter offers a distinct resistance to a number 5 F. olivary catheter about 4 1-2 inches from the ureteral mouth. Finally it admits the catheter, which is now shoved with some difficulty on account of this resistance to the pelvis. A moderate hydronephrosis is noted.

The catheter is withdrawn and a number 6 inserted. The next day a number 7 and 8 are inserted, the patient experiencing great relief and comfort through the following weeks when she is closely followed. The supposition obtains that she still experiences relief as she has not been heard from in several months.

V. *Removal of Small Stones from Ureter*.—By means of the cystoscope, this has been frequently accomplished. Stones caught at the ureteral mouth or presenting into the cavity of the bladder, may be snared or wormed free. Small calculi arrested in the ureter may be greatly assisted in their passage downwards by the use of the ureteral catheter. In those instances which have come under the writer's observation, the stone, or stones, were first located

by the X-ray. The ureter distal to the calculus is then irrigated with an adrenalin solution, and the pelvis of the kidney and the ureter uncomfortably filled with sterile warm olive oil, the pressure from behind and the enlarged calibre below apparently acting most favorably in certain cases.

A case in question: May 21, 1910.—S. M., age 40, married, has two children. Referred by Dr. J. G. Nelson. For ten years has had some pain in the back about the region of the kidneys, probably a little more on the left than on the right, but no history of a distinct attack of kidney colic. During this time, has frequently had in the act of urination discharges of a whitish material which felt gritty between the fingers. At times this came away in lumps. Has never noticed any blood in the urine, nor is there any pain on the passage of this grit. Recently the discomfort in the back and about the kidneys has been so distressing that he was unable to do any work. This pain is well localized over the kidney region, is of a dull burning character, does not radiate to the testicle, penis, or thigh, and is relieved in a measure by recumbency and heat. He urinates no more frequently by night than formerly, but very frequently during the day, probably every hour or so.

Examination May 28.—Short, compact, healthy man. Prostate normal, somewhat congested, vesicles normal.

Cystoscopy.—Bladder capacity 18 ounces; urethra took 23 F.; bladder mucosa healthy. Right ureteral mouth normal, left pouting, edematous, crater-like. Peripheral injection; ureters not catheterized. From the appearance of the left ureteric mouth, stone was suspected. X-ray by Dr. Gray, May 30th, showed two stones in the left ureter, anterior to the sacroiliac joint, the larger below, the smaller above.

Urinalysis, Dr. E. G. Hopkins, pathologist Virginia Hospital.—Amber, alkaline, 1024, chlorides, phosphates normal, indican considerable, blood small amount, pus few corpuscles, crystals, calculi, oxalate and ammonium, urates very abundant, phosphates considerable, no casts, epithelium—renal pelvis and bladder few. Diagnosis—suggests stone.

June 10.—The left ureter was readily catheterized. At about five inches a slight obstruction was felt, which was pushed aside, however, and the pelvis of the kidney attained. A warm sterile olive oil solution was forced in. The

globules of oil returning into the bladder were immediately noticed. When the catheter was within one inch of the mouth of the ureter, the solution was squirted forcibly into the ureter and held so for a minute or more. An interesting point is here noted, in that the pouting ureteral mouth became more swollen and the mucous membrane cloud-like and more puffy. The instruments were withdrawn and the patient returned to bed.

June 14.—Passed a little round soft stone about the size of the head of a pin.

June 18.—Feels more comfortable than in some time. The pain in the back much relieved.

June 25.—Passed another small stone on June 23d and passed grit at intervals. On the morning of the 23d had severe pain in back and had to go to bed.

June 27, 9 A. M.—Had the most severe pain yet, in same place (small of back and region of bladder). Hot water bag and enema gave some relief. At 8 P. M., voided a stone which was caught in the meatus and removed with fingers.

November 10.—Patient reported that he is in perfect health, has had no pain, and noticed none of the gritty substance since the stone voided on June 27th.

The writer has had no experience with wax-tipped bougies, for, with an X-ray picture, careful urinalysis, and ureteral catheterization, it would appear that this, used as a positive diagnostic measure would be both out of place and unimportant.

On two occasions, stone in the lower part of the ureter has been positively diagnosed by sounding. A small 10 F. male, olivary. metallic bougie was bent to a gentle curve, and along the side of a number 16 F. cystoscope inserted into the ureter as far as the stone, where the unmistakable click was obtained. It would seem that in suspicious cases of ureteral stone, with a negative X-ray (as in some uric acid deposits), this direct contact, which is both easy and absolute, would be of the greatest value in clearing up the picture.

VI. In *Gynecological Laparotomies*, characterized by marked uterine procidentia and cystocele, with consequent anatomical disorder, a preliminary catheterization may be the means of obviating injury to the ureter, with its unfortunate sequelae and embarrassing complica-

tions, for severance of the ureter in hysterectomy is not an unknown rarity.

In conclusion, the writer would add that ureteral catheterization is not a dangerous procedure. By virtue of an unusual arterial generosity, vertical posture, and positive flow, the ureter is highly resistant to infection. The customary aseptic precautions are liberally sufficient for the operator to have no worry along this line, for it must be borne in mind that the ureteral catheter does not come in contact with the urethral mucous membrane; it touches no mucous surface until it enters the os.

And finally, the technique of instrumentation is not difficult. It is both surprising and gratifying how quickly it can be learned. Any vessel filled with water with a dark cloth thrown over it will give the experimenter the mechanical problems to be solved. The one and only difficult feature, at times impossible, is locating the ureteral mouth. Much practice, and seeing a large number of cases will convince the operator how much they may vary in shape, size, appearance, coloring and position.

LESIONS OF THE SACRO-ILIAC SYNCHONDROSIS—A CLINICAL STUDY.*

By JOHN DUNLOP, M. D., Washington, D. C.

(Concluded from page 70.)

General Symptoms.—Although the complete picture may be very different in individual cases, owing to the prominence of certain features, yet when we have analyzed the cases sufficiently we find certain symptoms which vary little and are quite constant. Backache is probably the most common; or it may be termed "lumbago" or "rheumatism." In describing it, the patient almost invariably places the hand over the sacral region and often says that the pain is towards one side or the other, and may definitely point out the sacro-iliac articulation. I have had patients say that the pain only covered a spot on the surface the size of half a dollar. This pain may be constant, sometimes a dull ache, but most often it follows increased activity or any movement which would put a great amount of strain on the sacro-iliac ligaments. The most noticeable of these movements have been stooping, going up and down stairs, rising from a sitting posture and turning in bed. The mildest cases have been those with no other symptom than backache or a "catch in the back,"

during such exercises as horse-back riding, tennis, golf and billiards. As the condition of relaxation becomes more pronounced the severity of the symptoms increases until in some cases prostration has been so complete that standing was impossible.

The symptoms which come next in prominence are the referred pains, almost always present in one or more forms. In the first place, the faulty position which most of these cases take to relieve as far as possible the strain on the pelvic articulations causes a strain on the rest of the back, resulting not infrequently in backache high up and basal headache. When these cases are properly cared for the symptoms disappear, only to reappear when the treatment is discontinued too soon. Probably the most frequent accompanying symptoms or set of symptoms, are those definitely following the course of the nerve supply from the lumbo-sacral cord or the nerves passing close along with it. These nerve roots in entering the pelvis pass directly over the sacro-iliac articulations and any increase in motion or thickening of the articulations at this point causes an irritation. As the result of this we have the most distressing symptom—sciatica.

I have been impressed by the variety of referred pain, such as pains through the gluteal region, the nerve supply of which is also transmitted through the lumbo-sacral cord, as the superior and inferior gluteal nerves and the small sciatic nerve. One of the referred pains, which has so often been the only one present, was confined to the ischial tuberosity. This area is supplied by the inferior pudendal, a branch of the small sciatic.

The irritation of the obturator nerve and the accessory obturator would account for the pain referred to the hip joint, and a symptom which has been most prominent in several of my cases, a radiating pain extending inside of the lower abdomen to the groin. This, when situated on the right side, has in many cases simulated a chronic appendicitis, only located rather lower than the pain we should expect to find in such a condition. I have seen it present on both sides, or on either the right or the left side. In trying to account for this symptom I have gone over the nerve supply thoroughly, and find that the accessory obturator which exists, according to Quain, in one out of every three or four bodies, would

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readily account for it. This nerve passes over the sacro-iliac joint and the belly of the iliacus muscle and into the thigh over the ramus of the pubis; hence any irritation of this nerve would give just such pains in the region referred to.

Physical Signs.—It is remarkable how constant the objective symptoms are, when we know the clinical picture to be so varied. Some we find in practically all of the cases, while others depend on their severity. In the most severe cases, standing without support is almost impossible and any form of activity which would tend to produce motion in the sacro-iliac articulations would be very carefully guarded. This gives rise at times to peculiar attitudes; for instance, stooping and getting up from a sitting position are usually made with the hand on the hip—a picture so often used in the advertisements of patent medicines, whether cures for rheumatism or kidney complaint. Variations in the normal contour of the spine are very common, obliteration of the lumbar curve causing the flat back. In a large majority of my cases, lateral curvature has been present, either as a single or double curve, but, very oddly, the double curve has not always been the same when the sacro-iliac joint of the same side has been affected. I do not know how to account for this, unless the curvature was present previous to the pelvic joint condition. We should expect the concavity on the affected side, due to the persistent pull of the lumbar muscles in spasm.

In my entire series there has not been a case without spasm of the lumbar muscles. Usually this can be seen in the average individual, but in stout persons (and many of these relaxations occur with stout persons) the muscles cannot be seen or felt without great difficulty. Naturally the spasm is always on the side of relaxation, and if both joints are involved the spasm will be bilateral.

The normal contour of the sacral region may be changed. In the normal individual of average weight the sacral region is marked by distinct depressions at the location of the posterior superior spines of the ilia, and the triangle with its apex below is a rather flat surface somewhat depressed between the lines of the sacro-iliac joints which converge toward the coccyx. When there has been a lesion of one or both of these joints these landmarks be-

come much less distinct, especially over the affected joint, and there may even be a swelling over the site of the joints, due to an abnormal amount of fluid, or the sacrum may be more prominent in its entirety, often due, I believe, to its total misplacement backward. Anterior bending without flexion of the knees is restricted, unless the case be an extremely mild one. Lateral bending away from the affected side is painful, while bending toward the side of the lesion will be much more free.

Other means of producing motion in the joint with its accompanying pain are leg-lifting in the prone position with the knee extended, and abduction of the hips when flexed. Often one of the most distressing symptoms of such a lesion is sciatica, and its presence is determined in exactly the same way as any other form of sciatica, frequently by having the patient go through the back endings and leg liftings. The pain extending along the course of the sciatic nerve will readily demonstrate its presence.

In many instances considerable mobility can be made out at the joints themselves, so much so at times that in having the patient go through the necessary activities to demonstrate mobility, I have heard the joint produce a distinct sound, such as one might expect from bony surfaces slipping over one another. In a large number this sensation can be made out on palpation, but there still remains a large class of cases where mobility is extremely hard to demonstrate, and in my opinion not too much importance should be given to this feature of the examination, unless made by one quite familiar with it. I may mention that in a few cases motion is perceptible not only to the examining physician, but even to the patient. Pressure over the affected joint, especially at the region of the posterior superior spine, usually gives pain.

This symptom complex, one may say, is usual. Indeed, it is seldom that it does not picture the case, but I have lately come across cases where only one physical sign was present, or, still more difficult, one symptom; and it is these obscure cases which require much search for the truth.

If the pelvis is strapped with adhesive plaster, which should be worn for a few days, the diagnosis is made more certain by relieving the symptoms, and it is often quite a help in gain-

ing the confidence of the patient, which is most necessary, and often hard to accomplish. The usual history is that they have sought advice from a dozen physicians who have been unsuccessful in relieving the pain, and they consider that another is "just one more try." The relief from the adhesive strapping is often immediate, and to a marked degree; and I have found it most efficacious in tiding over uncertain mental periods of the patient.

Differential Diagnosis.—Since these cases simulate so many conditions it would be well to speak of a few symptoms which seem to be most frequently misunderstood. To enumerate all would, I fear, take too much time; nor do I feel at present that I have covered the field in my own experience.

Among the most common conditions which we have to differentiate are the pelvic and lower abdominal disorders seen by the gynecologist, obstetrician and surgeon,—for instance, pelvic and abdominal visceral displacements and diseases. Of more interest to the surgeon would be the vague cases of chronic appendicitis, dilated colons or sigmoid flexures, misplaced kidneys and indeed stone and diseases of the kidneys and ureters. This group covers those symptoms probably most frequently mistaken. The findings in the back, pelvis, abdomen, blood and urine should clear up the diagnosis.

As to the more general condition, neurasthenia probably has been most often incorrectly diagnosed. We should not be too hasty in coming to such a diagnosis, for I truly believe that if we work hard enough, we can find a cause for the nervous condition of most of our cases. It is not many years since just such a picture and history as so many of these cases give, brought us immediately to the diagnosis of neurasthenia; and I have no doubt that in many such cases a physical examination was omitted, or, if it were attempted, that the examination of the back was overlooked. When I mention that I have seen cases who had been treated for six months at our best institutions for neurasthenia without obtaining any relief and who were relieved almost completely within twenty-four hours by merely causing fixation of the sacro-iliac joints, the importance of at least eliminating this condition before coming to any conclusion will be apparent.

Lumbago and rheumatism probably come

next in frequency of diagnosis. In a former paper, I took the description of lumbago from one of our leading text-books on Practice. I repeat it here: "Lumbago, one of the most common and painful forms of muscular rheumatism, affects the muscles of the loins and their tendinous attachments. It occurs chiefly in working men, comes on suddenly, and in very severe cases completely incapacitates the patient, who may be unable to turn in bed, or to rise from a sitting posture." Could we find a better description of an acute sacro-iliac lesion?

The symptom of sciatica is one of the most frequent and persistent in the sacro-iliac lesion and when we find a sciatica, I believe we should be most careful to exclude any of the other symptoms of sacro-iliac lesion, for it has been my experience that it is so frequently an accompaniment of these conditions that one should always exclude their existence. A sciatica existing by itself without any mechanically irritating cause, I believe to be a great rarity.

As to rheumatism, I feel that such a diagnosis is usually based on the fact that one is not able to find any cause for the symptoms and since the laity have been educated up to its many and marvelous forms, we may procure a certain protection for our ignorance under this disguise. If however, we go further and mean by rheumatism one of the many forms of arthritis deformans (a term most descriptive in itself, merely meaning a deforming joint condition in disease), then we have a condition which is often very difficult to differentiate and can only be done by finding such lesions in other joints of the body, or by a radiographic examination.

Admitting that a true infection or toxemia exists which causes a pathological condition in the spine, such as in the typhoid spine, I yet want to call attention to this condition in relation to such a diagnosis. It is only reasonable to expect that the sacro-iliac ligaments should become relaxed during the recumbency and emaciation of such a disease, and I am firmly convinced that many typhoid patients suffering from backache both before and after getting up, do so because of a loosening of the sacro-iliac joints. I know of a number of such cases which have been relieved by adhesive plaster strapping and a small pillow for the lumbar

region. In this connection I wish to speak of the post-operative backache. Many of you, no doubt, have seen it. I have not only seen it, but experienced it and I know few things more distressing. This is caused in just the same way as the backache of typhoid fever recumbency, but is a more acute condition—a true relaxation from anesthesia. This can always be avoided by the use of a lumbar pad during anesthesia and I am pleased to say that in a number of hospitals the use of this pad is a part of the regular technique.

To some of us who go more or less into medico-legal work, I should like to speak of this condition in connection with such diagnoses as railroad spine and traumatic hysteria. I have seen one case with one of the above diagnoses which readily cleared up when fixation of the pelvis was accomplished. As nothing pathological has been advanced to explain such diagnoses I should suggest the possibility of a sacro-iliac lesion as being a probable explanation.

Prognosis and Treatment.—Such a number of these cases have now been recognized that one is better able to judge what the outcome is to be, or at least what one may expect it to be. Perhaps when I have previously spoken on this subject, my prognosis was too rosy to be believed. I have had some set-backs and it has been just these which have helped me in forming my conclusions as to the ultimate outcome, and have directed me in the course of the treatment. I still believe that *practical* cures can be obtained in every case; that to obtain these results requires close observation of the course of the case and great care in its proper conduct.

Whether or not there is a dislocation present plays a very important part in the prognosis. It would seem at first that the prognosis of the cases of dislocation would be much more grave than in cases of relaxation, as the clinical picture of such cases is surely more distressing, all of the symptoms being more constantly present and complete relief by fixation methods being impossible. I believe that dislocation exists in a very much greater proportion of cases than formerly and that it may be due either to a quick injury in a joint where the ligaments are in a fair condition and the injury is due to direct violence, as in dislocation of the joints; or it may occur in a very

loose joint where the tone of the ligaments has been lost and where, when reduced, the ligaments are not in condition to prevent a recurrence. The latter type naturally give a gloomy outlook, whereas in the first group a reduction will often bring the symptoms to an end within a few days, although of course treatment must be kept up. In the cases where we consider the symptoms as merely due to a constant vibration of a loose joint, the prognosis will depend almost entirely on the general health of the patient, and proper hygienic measures are quite as important as the local treatment.

The first thing to be considered is a means of fixation of the pelvic articulations, for the symphysis pubis at times requires quite as much attention as the sacro-iliac joints. To get proper fixation by any method whatever requires experience. I have found that the individuality of each case is no more vividly demonstrated than in sacro-iliac lesions. If fixation does not give sufficient relief, then we must consider the possibility of a dislocation, and reduction must be made under complete anesthesia, as entire relaxation is required. The after treatment is much the same as in the uncomplicated case.

The patient must next be put in the best hygienic surroundings which it is possible to obtain, with special reference to the proper regulation of the bowels. Medication will consist of a tonic to get things started properly, but further there is rarely a drug required. Indeed, it is often the case that these individuals have been so maltreated by the use of drugs, especially the anti-rheumatic group, that it is a great relief to be freed from them. Frequently the digestion has been put *hors de combat* by their use.

It is of the greatest importance for a cure of such conditions to have the muscles and ligaments restored as nearly as possible to the normal. This can be done in numerous ways, a few of which I will enumerate: 1.—Graduated exercises under most careful medical supervision. 2.—General and local massage, manual or mechanical. 3.—Hydrotherapy, especially local to the spine and buttock. 4.—Electricity. The patient should not be allowed to carry these out without supervision.

There are three important points in the treatment to be remembered. 1.—Do not give

up the diagnosis if the patient does not yield to treatment immediately. 2.—Be persistent in following up the treatment and see that the patient wears the apparatus properly and for a sufficient time and that precautions have been taken towards developing the muscular and ligamentous tissues so that they may properly perform their duties; and 3.—See that the patient so clearly understands the malady that he or she may use the proper precautions to prevent its recurrence.

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Proceedings of Societies, Etc.

MEDICAL AND SURGICAL SOCIETY OF THE DISTRICT OF COLUMBIA.*

Reported by JOHN DUNLOP, M. D.

CASE REPORTS.

Infectious Endocarditis.

Dr. Fremont Smith presented three cases of this condition.

The first case was a boy of 10 years. Infection of staphylococcus longus.

The second case was that of a man 39 years old, while the infection of malaria was present and Libmann's coccus.

The third case was a girl of 18.

He spoke of the great necessity of finding, if possible, the causative agent in these cases; how difficult it was at times to find, and the importance of a diagnosis. He showed a specimen of infective endocarditis procured from *Dr. Lamb*, not, however, of one of his cases.

Unusual X-Ray Pictures—Exhibition of Bladder Carcinoma—Special Cystoscope.

Dr. Hagner showed X-rays of a ureteral catheter *in situ* into a pus kidney, both with and without argyrol. He also showed a specimen of carcinoma of bladder, as also a cystoscope with which a piece of tumor may be obtained for diagnosis.

Kidney Abscess.

Dr. Stavelly presented a case of pain in the back of head and neck, followed by one hour of unconsciousness. She passed six ounces of pure pus, then the urine was clear.

DISCUSSION OF CASE REPORTS.

Dr. Reichelderfer saw a case at Garfield Hos-

pital which emphasized the difficulty in making a diagnosis of infectious endocarditis. This patient was in the hospital for several months without a diagnosis, and only just before death was the condition recognized. The patient was treated for typhoid fever. The murmur appeared only shortly before death and the diagnosis was verified by autopsy. No exact causative agent was found. The blood cultures were negative.

Dr. Hagner thinks that *Dr. Carroll* died of such a condition.

Dr. McKimmie asks if *Dr. Smith* considers the infection in his first case due to traumatism at the area where the adenoids were examined. He thinks that in the ordinary case the hemorrhage is inconsequential.

Dr. Kober asks if the gonococcus has ever been recovered in these cases.

Dr. Fremont Smith, in closing, states that it is impossible to say that the examination for adenoids was the direct cause, but that the trouble started two weeks after the examination. Undoubtedly the gonococcus has been found—a few cases reported from the Johns Hopkins. Some cases, he says, have continued fever from a year to eighteen months.

Dr. Miller said that he was most interested in the pictures with the argyrol injection, and thinks this method of great diagnostic value in differentiating phlebitis and stone. He thinks it a question whether the pelvic mass is due to a tumor or abscess, which deflects the catheter just before entering the pelvis of the kidney. He thinks it advisable to operate. He has used a stylet to indicate the ureter in the radiograph, but it is unsatisfactory, for it cannot show the pelvis of the kidney.

In regard to the case of cancer of the bladder, complete autopsies show that many have their origin in the pelvis of the kidney, and he thinks that such ought always to be considered and that the kidney and ureter should be removed.

Dr. Hagner thinks *Dr. Stavelly's* case is an old pus kidney. The question of operation for the kidney case had been considered, but the patient is only just recovering from a stroke of apoplexy, and he thought that the time was not now for operation.

In treatment of the inoperable cases of

*Meeting of January 5, 1911.

cancer of the bladder suprapubic drain with a metal cover has been very effective.

The paper of the evening, by Dr. Dunlop, was "Lesions of the Sacro-Iliac Synchondrosis — a Clinical Study."

DISCUSSION.

Dr. Reichelderfer spoke of the physiological motion present at the sacro-iliac joint. He spoke of the different varieties of nerve pain, the result of such a lesion and the differential diagnosis.

The nerve supply, as explained in previous papers by Dr. Dunlop, accounted for the symptoms of a number of obscure conditions, and supposes that this is the cause of many chronic aches and pains.

He found when he trained the High School Cadet Corps that there were certain of the boys who could not do some of the sitting-up exercises, such as the forward bending, side bendings and rolling motion at waist line. These exercises all caused pain, which was referred to the region of the sacro-iliac joints.

He thinks that most of such cases go unrecognized. He has had a few cases, one of which he remembers well was during pregnancy, when adhesive strapping gave immediate relief; another case was that of a colored man which came on after lifting. The adhesive plaster in this case also gave prompt and positive relief. He has looked through all of the recent text-books on surgery and the only mention of the condition is made by DaCosta, in which he gives credit to Dr. Goldthwaite and Dr. Dunlop for laying emphasis on so important a condition.

Dr. Stavelly spoke of how the general backache was so frequently thought to be due to a gynecological condition, but how now this condition should always be investigated, and that invariably he made such examination with reference to all pelvic and leg pains.

Dr. Miller says he has been interested for two or three years. Now he makes a back examination as a part of his routine.

The second case reported was one which he had seen in consultation. He says that the backache complained of in his experience may present a very different picture. In his obstetrical work he has been struck by the pain the woman often has when the head enters the pelvis. Since learning of this condition, he has been able to relieve temporarily this pain

by controlling the position of the head, but he believes although this has to be gone through with, yet that the suffering is not so extended. He thinks this temporary pain is due to an actual displacement.

We should take a broad and general view before reaching any conclusion and that the knowledge of this condition has been of great service.

Dr. Fremont Smith said that the paper brings out clearly that such a condition exists, but that it is one, and only one. We must not forget that there are such clinical entities as lumbago, sciatica and neurasthenia. These conditions or diseases existed many, many years ago, and no doubt still exist, but we must try to differentiate and separate them. We used to try gynecology; now this condition is to be thought of.

In speaking of lumbago, he believes that the condition recognized as lumbago, which formerly recovered in three or four days, was a true lumbago.

Dr. Kober cited a case which Dr. Dunlop had relieved in a few hours which had gone along with the diagnosis of sciatica for several weeks.

Dr. Atkinson says that he has at present a case which he considered traumatic neurasthenia and he hopes that the knowledge of this condition will be of help to him in this case. He asks for the prognosis in these cases.

Dr. Hickling says that this condition has been brought to our attention since our school days, and that it has not been given enough prominence in the text-books. He does not think that we should run to it as a diagnosis. He wishes Dr. Dunlop had been more explicit in outlining the treatment. He does not think that there should be difficulty in differentiating neurasthenia and hysteria, for both are very definite in their symptomatology. The vague cases should not be put in any category without a thorough and exhaustive examination.

Dr. Hagner thinks that all of the specialists enjoyed the paper and that it only went to show that a specialist could give something which was of interest to all.

The reflex pains at inside of thigh, etc., he thinks can be from prostatic disease. As to the positive diagnosis of neurasthenia and hysteria he says he would like to be shown.

Dr. Dunlop, in closing, said that all cases, he

thought, could be benefited, and the greater majority cured. In the simple cases, rest with apparatus, followed by proper regulated exercise. In those cases which did not yield to these simpler methods, he thought there frequently was a luxation, and such cases called for manipulative procedure. Still, other cases called for an arthrodesis. He did not mean to give the impression that such conditions as lumbago, neurasthenia and sciatica *per se*, did not exist, but that these diagnoses were those given most frequently to cases of this group incorrectly; therefore, he wished to lay special stress on the care with which such diagnoses be made. Many of the cases which had come to him after many years of suffering had voluntarily remarked that his examination of the back was the first that had been made. He is especially anxious that the backs of patients suffering with any such symptoms be examined.

Analyses, Selections, Etc.

Line Upon Line.

At the risk of being thought too much devoted to the cause of veratrum viride, now threatened with exclusion from the United States Pharmacopœia, we invite the attention of our readers to an article that ought forever to settle the question of its usefulness in the mind of every unbiased student of therapeutics. The article is a condensed clinical review of ninety cases of puerperal eclampsia and the treatment employed.

It was read at the "Twenty-third Annual Meeting of the American Association of Obstetricians and Gynecologists," held at Syracuse, September 20-22, 1910, by E. Gustav Zinke, M. D., Chief of the Out-door Clinic and head of the Obstetric Department of the University of Cincinnati, Ohio, and published in the *American Journal of Obstetrics and Diseases of Women and Children*, for February, 1911.

A condensed analysis of this forceful and unanswerable paper may be stated as follows: From 1875 to 1903, a period of twenty-eight years, he treated, counting private, hospital and dispensary patients together, sixty-four cases of puerperal eclampsia, including all known varieties and stages of the disease. His treatment up to 1903 was what might be called the orthodox treatment, consisting of inhalation of

chloroform during the attacks, catharsis as soon as possible, hot packs, hot baths and chloral per rectum; also venesection in two cases and morphia in large doses in one case, emptying the uterus, etc. Sometimes, small doses of Norwood's tincture of veratrum were given, "but never in the large doses recommended fifty years ago by Baker, and since then by Reamy and others." Results: Maternal mortality of the *ante partum* convulsions, 45 per cent., maternal mortality, *intrapartum* convulsions, 28.75 per cent.; maternal mortality, *postpartum* convulsions, 50 per cent.; total maternal mortality, 34.37 per cent.; fetal mortality, 45 per cent.

Since 1903, a period of seven years, twenty-six cases of puerperal convulsions were treated.

The treatment was uniformly as follows: The moderate use of hot baths, hot packs, strict milk diet, and "free but not exhaustive catharsis." "In every case, no matter how many convulsions the patient had had, 20 drops of Norwood's tincture were given hypodermically, and repeated every hour until the patient's pulse was reduced to 60 a minute. *When the pulse showed a tendency to rise again* another dose of from 10 to 15 drops was administered, and repeated every hour until the pulse was again down to 60 or below."

Some cases required three 20-drop doses to conquer the pulse and convulsions. On the other hand, "in one case after 15 convulsions, another after 11, and a third after 9, one dose of 20 drops was sufficient to bring the pulse down to 60. In neither of these three cases did the convulsions return, though smaller doses were repeated to hold the pulse down."

Now for the results. Of the twenty-six cases only four were lost. Of these four, two were "moribund when first seen by the writer," one of them dying from hemorrhage and shock following "a violent and protracted attempt at delivery by a colleague of good repute," the other from shock of Cæsarian section after receiving 1 3-4 grains of morphia hypodermically, besides a liberal use of chloroform. The third died of septic infection one week after the ninth and last convulsion. The fourth died after one long convulsion, apparently of cerebral hemorrhage.

The remaining twenty-two patients recovered. The fetal mortality was slightly larger than in the other series of cases—namely, 50 per cent. No comment, however eloquent, could speak

more forcibly against the folly of teaching that veratrum and aconite are identical in their therapeutic applications and effects. The paper of Dr. Zinke mentions also eighteen cases in the practice of Dr. William Gillespie, of Cincinnati, treated in a similar manner, all recovering.—(*Editorial, Southern Medical Journal*, May, 1911.)

Thyroid in Pseudo-Nephritis.

Marchiafava cures a pseudo-nephritis with thyroid treatment. He claims that the presence of casts and albumin in the urine may not mean nephritis, but thyroid insufficiency. Where there is thyroid insufficiency one should expect to find somnolence, obesity, dry skin, chilliness, a slow, weak pulse, a hoarse voice, an uncertain and languid gait, and perhaps a swollen face.—(*Critic and Guide*, May, 1911.)

Death Rates in the Japanese War.

Charles E. Woodruff, U. S. A., protests against the position taken by journalists and others that the Japanese had a remarkable immunity against disease in the Japanese War against Russia, due to superior hygiene. The official Japanese figures have just been published and show that it is quite otherwise. The proportion of sickness and of deaths from disease is as great or greater than that of the Russians. The campaign was fought in a cold climate, quite different in its hygiene from that of a tropical climate, such as obtained in our own Cuban War. Their deaths from wounds amounted to three times as many as in our Civil War. There was an enormous amount of beriberi in the Japanese Army. Military observers have reported widespread neglect of ordinary sanitary precautions among the Japanese. They were reckless and sacrificed men needlessly. The smaller bullets now used and the better antiseptic dressings have diminished the number of deaths from wounds since our Civil War. Our results with the wounded in our Spanish War were better than the Japanese results with their wounded. The original mistake was due to our ignorance and to the ability of the Japanese to conceal the truth, a good war measure which helped them to secure a victory.—(*Medical Record*, April 8, 1911.)

Acute Urethritis of Chemical Origin.

William J. Robinson, New York, believes that urethritis due to the application of strong

antiseptics to the urethra is not infrequent, and is attributed to gonorrhœa, with the result of the continuance of the disease for a long time. He reports three cases which came under his observation; one was caused by the use of a very strong solution of corrosive sublimate on the advice of a druggist. The second was due to zinc sulphate; the third was due to the silver nitrate test for gonorrhœa. In all three cases repeated examinations failed to show the presence of gonococci in the discharge. Most cases of this kind are due to self-administered remedies. The diagnosis is to be made by the history, freedom of discharge from gonococci, and improvement when let alone. A useful agent in treatment is a solution of an organic derivative of iodine in olive oil.—(*Ibid.*)

Book Notices.

Principles and Practice of Modern Otology. By JOHN F. BARNHILL, M. D., Professor of Otology, Laryngology, and Rhinology, Indiana University School of Medicine; and ERNEST DE W. WALES, B. S., M. D., Clinical Professor of Otology, Laryngology and Rhinology, Indiana University School of Medicine. Second edition revised. 8vo. 598 pages. 305 original illustrations, many in colors. Philadelphia and London. W. B. Saunders Company, 1911. Cloth, \$5.50; Half Morocco, \$7.00 net.

All members of the medical profession, who are familiar with the first edition of this work, will welcome its second appearance.

This is a complete and admirable exposition of our up-to-date knowledge of otology, and, therefore, a valuable addition to the library of the practitioner of medicine, the student of otology, or the trained specialist. New material has been added to this edition, notably a full explanation of the tests for functional examination of the ear adopted by the eighth Otological Congress, to insure more uniformity in this regard among otologists.

The chapters on mastoiditis, and its intracranial complications, with the operations for their relief, are very complete. It is to be regretted that the authors overlooked the value of the radiograph, particularly in locating the position of the sinus.

The book is well illustrated, and gotten up in fine style, and will commend itself to any one interested in the subject of otology.

J. A. W.

Editorial.

Prevention of the Psychoses.

In no part of the field of scientific, sociological and philanthropic activities are there graver problems to solve than in that embodied in the prevention of the psychoses, and in successfully dealing with the insane and the mental degenerates. We can conceive of nothing that is of more vital importance to an individual than mental health, and nothing that should be more persistently guarded against than mental disease and degeneracy.

It is known that bad heredity, alcohol, syphilis, strain, unwholesome environment and faulty methods of training constitute the chief etiological factors of insanity and degeneracy. Viewed in the abstract these causes may seem to be readily removable, but when we consider them in a practical way we are beset with difficulties not so easily surmounted. As long as human passions dominate the mind, as long as ignorance and indifference regarding correct methods of living exist, and as long as the will and judgment of man are influenced by his feelings and appetites, just so long will the foregoing and other causes be operative in the production of direful effects upon the mind.

Sundry laws, such as the regulation of the marriage of the unfit, medical inspection of children, control or prohibition of the sale and consumption of alcohol, have been suggested (indeed enacted in some States) and doubtless have, to a considerable extent, a preventive influence, and result in good, yet the main reliance upon which an improved heredity and a healthy constitution is to be based is to be found in the creating of a public conscience regarding these matters. Permanent segregation, and in some conditions, sterilization, under State control, of the confirmed mental degenerate, offers one of the best solutions for the prevention of the transmission of defective heredity.

Persistent and systematic teaching and training regarding physical, mental and moral hygiene in the child at home, at school and in the factory, constitutes another important factor in measures of prevention, which has not yet received the serious attention deserved. Then too, clean, temperate and moral living, and wholesome mental habits, avoidance of too

great continuous stress, are matters that should be impressed more forcibly upon the adult if he would steer clear of mental breakdown.

"Our remedies oft in ourselves do lie,
Which we ascribe to heaven."

That a large percentage of the psychoses may be cured if recognized and treated in their incipency goes without saying. But how is this to be done? In every city of any considerable size dispensaries or clinics and psychopathic hospitals, or such wards in connection with general hospitals, and outdoor departments at the State institutions, would offer opportunities and advantages in the treatment of cases at a time when abortive or curative measure may be successfully instituted. The medical supervision of cases for a period following their discharge from hospitals for the insane offers another means of prophylaxis—the prevention of subsequent attacks. Indeed such a movement would go far towards educating the public mind in a knowledge of prevention.

Until there is a more general enlightenment respecting the causes of insanity and degeneracy and an application of the best known means of their prevention and early treatment, and until alienists, general practitioners and the public work in unison, with a singleness of purpose, there can be little hope of lessening their prevalence. Here we have problems the solution of which lies mainly in the province of the medical profession.

American Medical Association.

As the date of the Los Angeles session, June 27-30, approaches, doctors all over the Eastern section of the States, who will be able to attend the meeting, are anticipating with pleasure the many advantages to be derived from the trip across the continent, the handsome entertainments to be enjoyed, and the side trips which may be taken for sight seeing purposes. As several meetings are to be held in Los Angeles and Denver the latter part of June, an unusually large number of doctors are expected to be in attendance at the meeting of the A. M. A.

The railroads east of Chicago have decided to allow a rate of one fare and a half on the Los Angeles trip east of Chicago, while the rate from Chicago to Los Angeles and return is \$62.50, plus an additional \$15 for those who return by one of the Northern routes. The reduced rates

will prove an unusual opportunity to the doctor who can take this trip.

Drs. Wm. E. Anderson, of Farmville; T. C. Firebaugh, of Harrisonburg, and Clifton M. Miller, of Richmond, are delegates to the Association, appointed at the last meeting of the Medical Society of Virginia.

Dr. Ernest C. Levy,

Chief Health Officer of Richmond, Va., is to be congratulated on his most excellent work, which causes Richmond now, for the first time in its recorded history, to be without a single case of typhoid fever, even in its remotest suburb. Dr. Ennion G. Williams, State Health Commissioner, announces that "Dr. Levy's achievement may very properly be regarded as the most signal triumph of health work in the State." It is hoped the work accomplished by Dr. Levy may prove an incentive to health officers in other cities to bring about like results in their localities.

The State Health Department will aid local health officers in investigating outbreaks of typhoid fever in all sections of the State, and requests that no time be lost in reporting even suspicious cases. Its bulletins telling how to reduce the number of flies and mosquitoes, carriers of this disease, may be had upon request.

The Southwest Virginia Medical Society

Holds its next semi-annual meeting at Roanoke, Va., June 20-21. The Southwest Society has probably the largest membership of any local medical society in this State, and with its present set of enthusiastic officers, it is needless to say a pleasant meeting will be enjoyed by those in attendance. The officers are: President, Dr. M. L. Dalton; vice-presidents, Drs. S. W. Dickenson and M. G. Robinson; secretary-treasurer, Dr. A. B. Greiner. The Executive Committee is composed of Drs. L. G. Pedigo, R. M. Wiley and T. K. McKee.

The Post-Graduate Medical School,

Which is operated in connection with the Augusta County Medical Association, had a well attended meeting on the tenth of this month, at which time the following officers were elected: Dean, Dr. Hunter B. Spencer; vice-dean, Dr. W. F. Hartman; recorder, Dr. A. J. Burkholder; treasurer, Dr. John F. Armentrout; house committee, Drs. Parkins,

Spencer and Hartman. The school is constantly adding to its library, and endeavoring in every way possible to make it attractive to the doctors of that section.

The American Journal of Gastro-Enterology

Is a new medical publication to be issued quarterly, beginning June, under the auspices of the American Hospital for Diseases of the Stomach, with office at 146 North Tenth Street, Philadelphia. Dr. Lewis Brinton, head physician of the hospital, will be its editor, and will have associated with him an able staff of associate editors and collaborators. This journal will be devoted exclusively to the scientific study and treatment of stomach and intestinal diseases, and will cost \$1 per annum.

Dr. Wm. F. Drewry

Was recently elected president of the Petersburg Education Association, which has just been organized in that city as a branch of the Virginia Co-operative Association. It is needless to say that the organization will prove a success, as we endorse the sentiments of the Petersburg paper in its statement that "Dr. Drewry has a way of making a success of any movement he undertakes."

Dr. O. C. Brunk,

Whose resignation as Superintendent of the Eastern State Hospital at Williamsburg, Va., became effective the 15th of this month, has left for New York City, to take a post-graduate course of about a year. We are pleased to note that the doctor now expects to return to Virginia at the expiration of this time, and will probably locate in Lynchburg, for private practice.

The Association of Surgeons of the Southern Railway

Will hold its sixteenth annual meeting at Selwyn Hotel, Charlotte, N. C., May 29-31, 1911. The officers of this Association include president, Dr. Wm. C. Day, Danville, Va., and Dr. J. U. Ray, Woodstock, Ala.

The Child Welfare Conference

Is meeting in this city as we go to press. Many notable speakers are in attendance, the Russell Sage Foundation having sent several of

its foremost authorities on children to address the conference.

The Association of Surgeons of the Norfolk & Western Railway

Will hold its annual meeting June 15th, at Richmond, Va. Dr. Southgate Leigh, of Norfolk, Va., is president of the Association, and Dr. J. R. Garrett, of Roanoke, Va., secretary-treasurer.

Dr. A. S. Rixey,

Of Culpeper, Va., has been appointed a member of the Medical Examining Board of Virginia, representing the Eighth Congressional District, to succeed Dr. R. M. Slaughter, who recently resigned on account of ill health.

Dr. Llewellyn F. Barker

Has sufficiently recovered from his recent operation for appendicitis and gall stones to be able to return to his home. Dr. Barker, it will be remembered, attended the last meeting of the Medical Society of Virginia as an invited guest, and added many Virginia doctors to his list of friends while there.

Lawyers Entertain Doctors.

The Richmond (Va.) Bar Association entertained the members of the Richmond Academy of Medicine and Surgery at the Westmoreland Club on the evening of the 18th. After short talks by Ex-Governor Montague, Mr. Carlton Jackson, and Drs. Geo. Ben Johnston, Stuart McGuire, and J. Allison Hodges a handsome buffet supper was served. As may be expected when these two factions get together, a thoroughly enjoyable time was had.

Obituary Record.

Honor the Memory of Dr. Nash.

At the call of the President, Dr. Israel Brown, the Norfolk County Medical Society assembled in special session on the evening of the 27th of April, 1911.

The President announced the death of Dr. Herbert M. Nash, who was nearing 80 years of age, and who had been in the practice of medicine nearly 60 years. In a brief, prefatory statement, he outlined the main events of the

deceased's life, referred to his close affiliation and great affection for the Norfolk County Medical Society, his life of steadfast fidelity to medical ideals, his usefulness to humanity through this long period as a physician, a citizen and a soldier.

A committee was appointed to draw up resolutions of respect to the memory of Dr. Nash, which resolutions appeared in full in our last issue. After this, Dr. Herbert Old, who had been intimately associated with Dr. Nash for a number of years, read a sketch of his life.

Following Dr. Old, Dr. Southgate Leigh read the poem entitled "The Beloved Physician," written by Bishop Tucker, celebrating the fiftieth anniversary of the practice of Dr. Nash, which occurred several years ago.

THE BELOVED PHYSICIAN.

A century's half of honest toil,
The record lies where all may read,
The years so free from stain or soil
So rich in noble work and deed.

A century's half not spent for gain,
But spent in ministries to man,
Who heals the sick, who soothes the pain,
Succeeds to work which Christ began.

No greener laurels grace the brow
Of soldier, hero, prince nor bard
Than those with which we crown him now,
Who deemed no path of duty hard.

No fear of pestilence deterred,
No dread of sword, of shell nor ball,
He simply went where'er was heard
Of human need and woe the call.

The crescent years look down today
On many valiant deeds of love.
"Well done! O, kindly heart," we say,
"Well done!" the Christ will say above.

Reminiscences of the life of Dr. Nash were related by many members of the Society, among them being Drs. Livius Lankford; T. E. Baird, Herbert Old, Lomax Gwathmey, Southgate Leigh and Ed. Starke.

The following resolutions were offered by Dr. Jas. W. Hunter, following the adoption of which the Society adjourned:

The historical sketch as read be incorporated with the resolutions of the Society in the minutes.

A copy of the resolutions be sent to the family and published in the daily papers.

A floral tribute be sent for the funeral.

The Society attend the funeral as a token of affection and respect.

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Original Communications.

PREVENTIVE MEDICINE—WHAT IT HAS DONE, AND WHAT IT CAN DO IF THE STATE WILL BUT RECOGNIZE ITS OBLIGATIONS TO THE PUBLIC.*

By JOSEPH A. WHITE, A. M., M. D., Richmond, Va.

When his Satanic Majesty destroyed the Terrestrial Paradise of the Garden of Eden by inoculating Mother Eve with the germ of discontent, he sowed also other germs that have borne fruitful crops of disease, but he covered his seed so well that it has taken the medical profession all the thousands of years that intervened between then and about forty years ago to get upon the trail.

In Exodus—Chapter XV, verse 26—it is recorded that Moses, the great law giver and physician, said to his people: "If thou wilt hearken to the voice of the Lord, thy God, and will do what is right in his sight, and will give ear to his commandments, and will keep all his statutes, I will put none of those diseases upon thee which I have brought upon the Egyptians."

Here Moses foreshadowed Modern Preventive Medicine, in as much as he promised immunity from the infectious diseases then prevalent among the Egyptians, if his people obeyed the laws he laid down in regard to health and right living. Just as in these days if such laws are obeyed or enforced, we will escape the ills that come of their violation.

And for more than thirty years the Medical Profession having once started on the correct trail, has been trying to commit Professional Suicide by directing all its efforts to the eradication of disease for the prolongation and conservation of human life.

It has made astounding discoveries of the causes of disease, and its old traditions are

gradually disappearing. Our age is one of wonderful progress, in all departments of science, and our profession is keeping pace with the age. Preventive medicine is the corner stone of our future achievements, and although it has already lengthened the average age of man in civilized communities, it is still in its infancy.

Its triumphs in the last decade, however, hold out hopes of greater things in the future, and as Dr. Osler has said in a recent article "Man's Redemption of Man" lies in the successful work of this science. Its development into a special science is the result of the revolution in our conception of the nature of maladies that have so afflicted the human race in the past—thus enabling us to take such measures, sanitary and otherwise, as to prevent their spread.

The high rank attained by the Medical Profession of this day, its great importance in the public eye, is because of its power to prevent or avert disease, and not because of its ability to cure. How much this power would be enhanced, how much more it could accomplish in the domain of preventive medicine in this country if our profession was represented in the central government with a special Bureau of Sanitation and Preventive Medicine, presided over by a medical officer, as a member of the Cabinet, can hardly be estimated.

The warfare against preventable disease, and every year we are adding more human afflictions to this category, would be more successfully waged as appropriate legislation to this end would be enacted by the National and State Governments.

When this is done, and the necessary legal enactments enforced, fifty years hence will see many of the present scourges of the human race eradicated, and the time of human life still more prolonged.

Less than fifty years ago, the germ theory of disease first saw light, and Lister and Pasteur

*President's address before the Tri-State Medical Association of Virginia and the Carolinas, at Raleigh, N. C., February 22-23, 1911.

were among its first exponents, but to Robert Koch we owe the solution of the connection between bacteria and infectious disease.

In 1876 he gave us his work on *anthrax*.

In 1882 he discovered the bacillus of *tuberculosis*, and later gave us *tuberculin* as a means of diagnosis, and according to some an agent for immunization.

In 1883 he found the comma-bacillus of *cholera*, which resulted in practical preventive measures against its spread, by recognizing the cases early and isolating them.

In 1896 he confirmed Donald Ross' discovery that the *malarial parasite* (the *hæmamoeba*) was carried by mosquitoes (the *anopheles*) and gave us the idea of its prevention, by the use of quinine to stop the development of the toxins.

His studies of *typhoid fever* resulted in the present methods for its suppression.

More, therefore, than to any other one man, we are indebted to Robert Koch for the fundamental knowledge of the pathology of infectious diseases upon which preventive medicine is founded.

Others have added much to this knowledge that is of inestimable value.

Neisser discovered the germ of *gonorrhœa*, in 1879; Laveran of *malaria* (*hæmamoeba*), in 1880; Eberth the bacillus of *typhoid fever* (bacillus typhiabdominalis), in 1880; Klebs the germ of *diphtheria* (Klebs-Loeffler bacillus), in 1883; Kitasato the germ of *tetanus*, in 1889; Castellani of *sleeping sickness* (trypanosome), in 1882; Yersin that of *bubonic plague*, in 1894; Shiga that of *dysentery*, in 1898; Weichselbaum of *cerebrospinal meningitis* (diplococcus intra-cellularis), and Schaudinn that of *syphilis*, in 1905.

The demonstration by Reed, Carroll and Agramonte of Dr. Carlos Finlay's hypothesis that yellow fever was transmitted by a species of mosquito (the *stegomyia*) as Koch had done in regard to malaria, made the method of its prevention a simple matter.

Yellow fever killed hundreds of thousands prior to 1900. Reed, Carroll and Lazear experimented on themselves with the mosquito to confirm the above mentioned hypothesis, proved its accuracy, and the sacrifices it entailed to themselves saved the lives of thousands.

Look at the results in Cuba and Brazil. Is there any greater achievement in human annals?

Panama, called the graveyard of the white

man, has, because of the discoveries about malaria, been made as healthy, if not more so, than any city in this United States. Could preventive medicine have any greater monument?

Equally successful warfare has been and is being waged with other infectious diseases. Typhus fever has been practically eliminated. Koch gave us the control of cholera. The cause of typhoid fever being known, sanitary measures to keep the water free from contamination and the destruction of the house fly, its common carrier, go far towards its prevention.

TUBERCULOSIS.

Tuberculosis, one of the greatest of human plagues, has been robbed of half its terrors since the discovery of its causation. Sanitary and preventive medicine has reduced its mortality at least 50 per cent., and if it could be brought under such control as is possible with modern methods, rigidly applied by appropriate laws, the so-called "Great White Plague" would be reduced to a minimum. We know how it is caused, how it is spread, and how it can be prevented or even cured if taken in time, and yet for lack of such control, it is still killing more people than any other single disease.

A public campaign has been inaugurated in this country and has interested scores of people who are giving their aid to the medical profession in their efforts to stamp out this disease. This should be fruitful in results, but as Dr. Osler says, "the means instituted present difficulties interwoven with the very fabric of society, but they are not insuperable, and are gradually disappearing."

PLAGUE.

The discovery that the plague was carried by rats and their attending fleas, has gone far towards its banishment from civilized communities, and the fight in California since 1900, which resulted in its limitation to a small danger zone less than forty miles square, shows what can be done. Its present death march through Manchuria is due to neglect of all the simplest laws for limiting its spread.

CANCER.

Cancer is another of the human plagues that would be materially lessened by popular education on the subject. There are 80,000 cases, and 40,000 deaths annually in these United States, half of which could have been readily

cured by early diagnosis and appropriate treatment.

Nearly all acute diseases are due to bacterial infection, and bacteria cannot propagate on poor soil. Good sanitation is the reverse of good farming. Its object is to present as poor soil as possible to infectious agents, to do away with bad drainage, contaminated water, poorly constructed dwellings, overcrowding of human beings, and overworking them, improper food, and the excessive use of stimulants, tobacco, and drugs, and this can only be accomplished in time by such legal means to this end as can be enforced.

The discovery of the specific germs of various diseases, and the laboratory investigations of them brought about the development of protective inoculation and vaccine therapy on a scientific basis, as presented by

Pasteur in rabies;
Haffkine in cholera;
Behring in diphtheria;
Shiga in dysentery;
Flexner in cerebrospinal meningitis;
Leishman and Chantemesse in typhoid fever;
Kitasato and others in tetanus;
Yersin in plague.

Vaccination against typhoid fever is being experimented with, and has been partially successful.*

The scientific application of this principle to bacterial disease it is hoped will ultimately give us such results that most of these diseases will be a thing of the past. Most of the anti-bacterial serums thus far tried have not met with the success expected of them, except Flexner's serum for cerebrospinal meningitis, and probably the Pasteur treatment for rabies. Pasteur and Koch were the first to employ vaccine therapy, but Wright laid down the guiding prin-

*In 1896 Pfeiffer did the pioneer work. Leishman in three years and a half prior to 1908, showed that of 5,473 vaccinated only 21 took the disease, and 2 died; whereas, of 6,610 not vaccinated 187 took it, and 26 died. In Peshawur, India, an epidemic in the army was cut short by vaccinating 70 per cent. of the command.

In our own army, among 8,510 vaccinated not one took the disease, although 200 among the unvaccinated were attacked.

"Carriers" have been cured by six inoculations. The vaccine produces specific anti-bodies, which destroy typhoid bacilli. The injection is made subcutaneously, but no one should be vaccinated who is not perfectly healthy. First dose should be 500 million; second, 1,000 million, ten days apart.

There is slight constitutional reaction, malaise and headache. Local reaction, redness, etc., and sometimes tenderness of axillary glands. Anaphylaxis (or increased susceptibility) has not been demonstrated. Length of time for immunity undetermined, but about six months. Uses, prevention when an epidemic exists—in families where a case is—in hospitals, army posts, etc.

ciple of this treatment in establishing an index to determine the effect, and course of the reaction—viz., the opsonic index.

Further investigation and experimentation, may give us as great results from other anti-toxins, as have been demonstrated in regard to diphtheria antitoxin.

It is hoped that some day a specific will be found for every germ disease—*i. e.*, a remedy that when taken or injected into the system, will destroy the disease germ without injuring the healthy tissues.

Protective inoculation—as in small-pox (Jenner)—is to produce artificially a state of immunity against certain poisons that produce disease, by being inoculated with the bacteria or bacterial products of that disease, just as an attack of small-pox, scarlet fever, yellow fever, etc., protects against a subsequent attack.

The attack produced a certain antitoxin that fortifies the system against the invasion of certain germs or against the production of the toxins manufactured by these germs—*i. e.*, bacterial immunity is thus acquired naturally.

So also act the antitoxins which are substances injected into an individual to protect him against the toxins of a specific disease, and give an artificially acquired immunity.

But practically all the remedies which destroy living organism in the body tissues are poisonous, and if the dose required to do this is so large as to be dangerous, they are useless, because to be of practical value, they must destroy the offending organism without injury to vital organs.

Remedies of this character are divided into vaccines or serums, and chemical agents, or serum-therapy and chemo-therapy.

Animal parasites causing such diseases as malaria, trypanosomiasis, or sleeping sickness, amebic dysentery, syphilis, etc., cannot be destroyed by any known serum-therapy, and must be made to yield to such chemical agents as will render them non-toxic, just as quinine has been used in malaria for many years.

In the last few years, Ehrlich has done enough in this latter line of work to make him immortal, in addition to his discoveries in regard to toxin immunity.

Atoxyl was empirically shown to be useful in sleeping sickness, but was found to be dangerous. Ehrlich, in experimenting with this substance in animals, found a great number of derivatives (over 600), of which only a very few

proved to be valuable in killing the parasites, without damaging the organs of the animal. The most important of these were 418, arsenophenyl-glycin for sleeping sickness, and No. 606 or arseno-benzol for syphilis.

SLEEPING SICKNESS.

Trypanosomiasis, or sleeping sickness, is the scourge of Equatorial Africa, the germs of which are transmitted by the tsetse fly. Ehrlich's No. 418, has cured a large number of cases with one or two injections of a very small dose, but the mode of usage and dosage is still in the experimental stage.

SYPHILIS.

Syphilis has been known for 400 years, and done incalculable damage to the human race, but only in 1905 was its cause discovered by Schaudinn to be a germ known as spirochæte pallida of the parasite family of spirilla. Mercury and iodide of potash have a tendency to diminish the toxicity of these germs if not to destroy them, and have been our main dependence.

Ehrlich found the remedy that destroys the trypanosome was useless in syphilis, and in further experiments discovered that the 606th derivative of atoxyl, arseno-benzol, or salvarsan, caused the immediate disappearance of the spirochæte, when injected into an infected rabbit. His late improvement of this drug which is less toxic is known as "hyper-ideal."

By its use, syphilis has been made controllable and to some extent preventable. The spirochæte disappears in from seven to ten days after injection. It acts by causing leukocytosis and formation of anti-bodies.

Its early use cuts short the attack, and prevents secondary and tertiary symptoms in many cases, but not all. In syphilitic mothers, its use is said to prevent infection, and saves the child from its fatal inheritance. Thus far it has not done all that was expected of it, although it has made a remarkable record, and with further knowledge of its application, it may meet all expectations. But it is an arsenical preparation, and, therefore, poisonous and dangerous. It has caused hopeless blindness and produced other ill effects. It cannot be used by the patient, but only by a physician, as it must be given intra-muscularly, preferably in the gluteal region, or by intravenous injections, and only to suitable subjects, as there are cases where it is contra-indicated.

The important question now at issue is what

dose should be given at different stages of the disease, and what is the best way of giving it.

The achievements in chemo-therapy have, however, been wonderful, and opened up a great field for the alleviation of human suffering and prevention of disease.

OBSTETRICS.

Preventive medicine to be effective should begin at the beginning, in guarding the unborn child from hereditary trouble, in fact, it should go behind this, and prevent the union of those unfit to propagate the species. As far as possible, this is done in the animal and vegetable kingdoms, and the day may come when suitable legislation may accomplish the same among the human species—viz., only the breeding of the best from a physical and moral standpoint. This would only be an improvement on the old Spartan custom of making way with all maimed, diseased, or defective infants to save the State the expense of rearing undesirable citizens.

Waiting for this much desired goal, the next best thing is prophylaxis in the puerperal state, as nearly all the diseases of the new-born are preventable, especially the infectious diseases, and here the question of regulation of midwives is an all-important consideration, as thousands of women and children are annually sacrificed on the altar of the ignorance and incapacity of these women.

INFANT MORTALITY.

The question of infant mortality is a burning issue at present. Because of the heavy mortality the past summer, it has engaged the attention of our municipal authorities in most of our large cities; and in some of its aspects should be investigated by the State with a view to the prevention of the causes of the deplorable loss of life among our infant population. The babies of this generation are the material out of which the citizens of the next are made, and the State should give them proper protection. For instance, diphtheria still kills too many children, and physicians are partly responsible for it, in as much as they do not or will not use the means of prevention that science has given them, the proper employment of anti-toxin.* Twenty thousand children died in

*In mild cases, 3,000 units is the initial dose in the first 24 hours, 6,000 units if 36 hours have elapsed; and in 8 hours, if no marked improvement, same or larger dose, to be repeated every six or eight hours until convalescence. The cost of production of 6,000 units is about 35 cents, and sells for \$10, and at least \$30 worth is required for any case, practically prohibitive for the poor, unless the State puts it within their means, and in some localities this is being done.

America of diphtheria in 1909—statistics for 1910 were not available—14,000 of these deaths were attributable to the doctors' ignorance or carelessness. The death rate ought to be only six in 100,000 of the population, as it is in Paris, the effect of their admirable laws; and appropriate legislation would give us the same results. France is far ahead of us in measures to care for its infants, especially through the education of the mother. With a comparatively small birth rate, it has no children to spare, and must guard well those it has.

Here it may be asked if antitoxin is dangerous. Possibly, in rare cases when anaphylaxis has been produced by its use in a previous attack, within three weeks. It should then be used with caution, or not at all, but these fatalities are so rare as hardly to be considered.

CEREBROSPINAL MENINGITIS.

One of the greatest triumphs of preventive medicine in reducing infant mortality is the control of that terrible malady of childhood—cerebrospinal meningitis—by the isolation of the specific germ (the diplococcus intracellularis), and the later discovery of a serum by Dr. Flexner to neutralize or prevent the toxins.

SCHOOL HYGIENE.

School hygiene plays an important part in preventive medicine. The systematic examination of school children that has been inaugurated in many of our cities, and which should by State legislation be made compulsory in all schools, goes far to safeguard these little ones against the evil results of overlooking the various affections of the eye, ear and throat. Impairment of vision is discovered in time to correct any existing astigmatism, and prevent the diseased condition known as progressive myopia or nearsight, as also the asthenopia or weak eyes, so often due to some systemic condition of which it is only a symptom. The correction of impaired vision by the adaptation of glasses is not, therefore, the only remedy, because the impairment may be the result of some constitutional condition that requires investigation and treatment. But the prescribing of glasses is of as much remedial importance as prescribing of drugs, and no one but a trained physician should be allowed to do this work. The effect of eye strain on the nervous system of the child, and the many resulting disorders of mind and body that follow from neglecting or improperly treating the eye trouble that causes it, have

been so well demonstrated again and again by scientific investigation that it seems superfluous to refer to it here. Yet I feel constrained to do so because of the well-known disregard of such an important matter by our health authorities and the State. The public should receive appropriate education along these lines, and the State should restrict the adaptation of glasses to those competent to prescribe them, if we would protect these children from the evil consequences of misfit lenses.

Nasal obstruction, and its serious complications of mouth breathing, and commencing deafness, are discovered, and treatment applied early enough to prevent the damaging consequences of its neglect.

Preventive surgery has its field as well as preventive medicine, and there is no more important work in this line than the early removal of adenoids, if obstructive to normal breathing, and of the tonsils when they have given trouble, and show evidence of being a menace to the organism as a focus of infection.

OPHTHALMIA NEONATORUM.

Among the preventable afflictions of the human race is the blindness resulting from the purulent ophthalmia of infants. This plague has been made the subject of special legislation by the A. M. A., and through its sub-committees in every State, has tried to get State laws for its suppression, and the Russell Sage Foundation has appropriated money to assist in this work. It is readily preventable, and every physician knows or should know its cause, its infectious character, its danger to sight, its prophylaxis, and its treatment when preventive measures have not been taken. When it occurs in the practice of any physician, it is due to his negligence or ignorance.

Therefore, every case is a disgrace to the profession, and a blot on our civilization. Think of it! Sixty thousand blind persons in the United States, of which 20 to 45 per cent. are blind from ophthalmia neonatorum, blind because of the culpable negligence of members of our profession, or, because of the ignorance of the midwives who have officiated at the births in place of the physicians. What a commentary on modern up-to-date preventive medicine!

Should not something be done to make our preventive knowledge effective, and save the sight of these little ones? A campaign of education should be instituted among physi-

cians to awaken them to the importance of this subject, the public made to understand what it is, and what should be done to prevent it, and among midwives to make them appreciate one of their most essential duties in their attendance upon a birth.

Legal enactment should be passed in every State, making birth reports obligatory (a most important factor in vital statistics) within thirty-six hours by whoever presides at the birth, and in addition a report within six hours of any eye trouble manifesting itself.

Midwives should be placed under legal control, by requiring them to be registered, and licensed, and to meet certain requirements before being registered, and to be held responsible for neglect in reporting births or ophthalmia promptly, under penalty of losing their license.

Both physicians and midwives should be compelled to use the prophylactic treatment in all infant's eyes at birth, and this can only be accomplished by proper legislation, as has already been done in some States.

Why should Virginia and the Carolinas be behind in this important work?

The profession of these three States could do much towards having the needed legislation passed, and this Association would be an important factor in such a crusade.

DEFECTIVE VISION.

Take also the question of increasing defective vision among adults, where preventive measures have such a fertile field.

Mr. John Darch stated before the Congress of the Royal Sanitary Institute, recently held at Brighton, England, that "defective vision was the outcome of ill-regulated civilization, and it is estimated that about half the students and close working classes are sufferers therefrom in one way or another. Insufficient, or improper lighting in schools, offices and workshops, is largely responsible for the increase of myopia, astigmatism, and their attendant nerve troubles."

If the State would enact some legislative regulations to compel adequate lighting of all places where close work is carried on, it would prevent many of these troubles. That the State has the right and the power to do this, if it will recognize its duty, is unquestioned. The subject of proper illumination of all places where people congregate and work should be as much considered by the State authorities as proper drainage.

It is as much the duty of the State to look out for the preservation of the health of its citizens as for their protection from injury or robbery. That this is to a certain extent recognized is shown by the establishment of Government, State and Civic Health Boards all over the civilized world. No one questions the right of the State to isolate persons suffering from contagious diseases, and to restrain their personal liberty to such an extent as may prevent others from being infected. This right should apply equally in all directions that can prevent diseased conditions of any kind, which might impair the usefulness of the citizens or imperil the health of the community.

Recently a decision was rendered in Minnesota that a municipality was liable for deaths from typhoid fever if it carelessly allowed its water system to become polluted. Diseases are, however, contracted in other ways as well, and most of them are unnecessary, being the result of ignorance of the commonest laws of health, and, therefore, are preventable. Prevention is the only treatment, because once contracted, quite a number are incurable.

When scientific medicine has discovered the cause of any disease, and demonstrated that it can be controlled or prevented by certain measures provided these measures can be applied, it is the duty of the State to vest its health authorities with the power to enforce their application whenever and wherever needed.

As for example, compulsory vaccination for small-pox, the compulsory use of antitoxin in diphtheria, etc., just as we now have a compulsory quarantine in well-known infectious and contagious diseases by excluding or isolating persons who have been exposed to the risk of contagion.

The question of invasion of personal rights and personal liberty should never obtain in the case of the few when we consider the risks of the many.

Boards of Health are doing much, but not enough, because of the lack of authority. Their work is all uphill work, because the protection of the public health often requires the individual to do what he is unwilling to do, and it is difficult to make him see the necessity of this unless some personal or family disaster or affliction brings it home to himself. Fear or affection often converts the obstructionist to a realization of the importance of public health problems when no argument could convince him.

It is a strange commentary on human intelligence that there are regularly organized anti-vaccination societies, formed to combat vaccination against small-pox; in fact, to fight for the continuance of one of the most destructive of diseases, and in consequence many States lack a compulsory vaccination law.

When the public health authorities have the power and the means to enforce their orders for the protection of the community against disease, they can afford more efficient protection in this regard, than the courts and police could give against injury or robbery, as has been demonstrated in Cuba in the eradication of yellow fever, and in Panama of malaria. With the power, and the money to meet expenses, the public health problems would be readily solved.

Funds to carry out their work are in most places lacking, because our Governments, States and municipalities are mostly niggardly in appropriating the means to do what should be done to prevent or control disease. Where did the means for the campaign against hookworm disease come from? Not from the States where it was prevalent.

Germany is far ahead of us in this respect, and its government gives liberally towards scientific investigation into the causes and control of disease in its universities and hospitals, and to its public health authorities in the practical application of the results of such investigation.

Look at the names of the discoverers of the causes of disease. Not an American among them, because of lack of means and facilities for making the necessary investigations.

The public health in all its aspects should receive as much attention from the National and State Governments as questions of policy, finance, commerce, etc., if from no other motive than that of the pocket—viz., from an economic standpoint.

If the citizen is diseased, his usefulness is curtailed, if as a result of disease he is maimed, crippled or blinded, he often becomes a burden to the community, if his life thereby is cut short, his services are ended. Has anyone ever calculated the economic loss to the country that might be materially reduced by giving the same attention to the preservation of the human species as is given to animals? It must amount to millions annually, if we figure that every individual life has an actual value in the work it is supposed to do in the community.

Sooner or later, the day will come when the value of human life will outweigh all other considerations, and the battle against disease, which modern preventive medicine has inaugurated, will enlist all the people when they are made to realize its importance to themselves individually, in the present, and to the human race at large in the future.

200 East Franklin Street.

SURGICAL ASPECTS OF TYPHOID FEVER.*

By GEORGE TULLY VAUGHAN, M. D., Washington, D. C.

Professor of Surgery, Georgetown University;
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In discussing the surgical aspects of typhoid fever there are just two points upon which I would like to speak—namely, *perforation* and *hemorrhage*, both of which so often cause death. Since Mickulicz did the first operation for typhoid perforation in 1884, there have been thousands, perhaps, of such operations performed with the saving of many lives. The mortality now after operation is about 25 to 30 per cent. and is steadily diminishing. My own experience consists of fourteen operations with four recoveries, but many of my cases were desperate, even more than usually so. Without operation it is probable that the mortality from perforation is about 95 per cent.

The great trouble even yet is to get the attending physician to call in the surgeon in time to operate before peritonitis becomes well established. Most physicians are alive to the importance of this, but there are some yet who allow themselves to be deceived into waiting till the golden opportunity has passed, and call in the surgeon when the patient is almost moribund and the history shows that perforation occurred twenty-four or forty-eight hours previously.

As a rule, there is no difficulty in making the diagnosis of perforation. It may occur while the patient is in bed, or during convalescence while he is walking around. The most common and most valuable symptom is *pain* in the abdomen. This may be slight, but it is usually severe and comes in paroxysms—often attended with several passages from the bowels; the passages may contain blood. The expression of countenance is often of value; a change comes over the face, and there is a look of anxiety, pallor, a ghastly, lurid, or pinched expression. The temperature nearly always falls—some-

*Read before the Fairfax County (Va.) Medical Society, at Washington, D. C., February 2, 1911.

times two or three degrees—and then rises again. The pulse is often unchanged for some hours, then it becomes rapid. Other symptoms and signs, such as leucocytosis, disappearance of liver dulness, vomiting, sweating, may aid in making the diagnosis, but the main symptom—the one on which the diagnosis should, and usually can, be made, and made early, when operation is most successful—is *pain*. Perhaps now and then an operation will be done and no perforation found, but in the long run many more lives will be saved by this method than by any other so far known.

In the paper I read January 24, 1906, I said, "Indeed the time may come when typhoid fever will be treated as a surgical disease from the beginning. As the primary infection is in the glands which make up Peyer's patches, and the septicæmia which constitutes the general symptoms is the result of absorption from the point primarily infected, why not, as soon as the diagnosis is established, open the abdomen, excise the affected Peyer's patches, or if many are involved, excise the lower part of the ileum, thus removing the depot of infection in the same way that we remove the appendix, the gall-bladder, or glands from the neck, axilla, or groin for various forms of infection?"

Hemorrhage.—It has been estimated that from 30 to 50 per cent. of those who have severe hemorrhage die from it. I have seen several such cases. I have seen a young man with typhoid fever, doing well apparently, taken suddenly with griping in the bowels. This was followed by several blood-stained stools, and then a copious flow of blood, so much that his mattress was saturated and the blood ran down on the floor. In spite of all that could be done, the bleeding continued till death closed the scene.

There are many cases similar to this, in which drugs, posture and application have no effect. Such cases should be operated on and the bleeding point secured. The question is asked, "How will you find the bleeding point?" From my experience in operating for perforation, I believe there would be no difficulty in finding the source of the bleeding. We know that it originates in one of Peyer's patches and in one that is inflamed. There are usually only a few of these, and those most affected are most apt to be the source of hemorrhage. These can be excised and the wound closed with sutures, or if many are affected the bowel can be tele-

scoped, the upper part invaginated into the lower for several inches and fixed with sutures, thus producing pressure enough to stop bleeding, or the piece of bowel could be resected.

I do not advise operation in every case of hemorrhage, but when the patient's condition becomes serious, either from repeated small hemorrhages or from a single copious hemorrhage which continues, I believe one of the methods of operation I have indicated should be tried. I intend to try it whenever a suitable case is presented.

1718 I Street, N. W.

THE MEDICAL ASPECTS OF EXOPHTHALMIC GOITRE.*

By ACHILLES L. TYNES, M. D., Staunton, Va.

The object of this paper will be to give a resume of some of the recent literature upon the subject of exophthalmic goitre, Basedow's or Graves' disease, as it is variously called. I make no claim to originality, and shall use freely the results of the researches of others; and where I care so to do, shall adopt the very language of the writers who have so abundantly enriched the literature on this subject.

According to Thompson, the function of the thyroid gland is to furnish an internal secretion for the building up and maintenance of the organism, a lack of which secretion produces nutritional disturbances, such as myxœdema, while its over-production produces nervous phenomena, such as exophthalmic goitre.

Before discussing the various theories as to the etiology of the disease, let us first consider its symptomatology, since our position regarding the *cause* of exophthalmic goitre will depend upon our conception of the *nature* of the disease.

The symptoms of Graves' disease occur in great variety and in many combinations. I shall make no effort to observe a regular sequence in enumerating the symptoms, as indeed none obtains in the development of the disease.

The thyroid gland varies in size from a tumor barely recognizable by delicate palpation to one of enormous size. The gland may be hard or soft, cystic, adenomatous or fibrous. It may be unilateral, bilateral or only the middle lobe may be enlarged. I have only recently been able to see one of the last named type, and

*Read before the Augusta County Medical Society, at Staunton, Va., November 2, 1910.

gladly exhibited it to a fellow of this Society who is now present.

Circulation.—Among the earliest symptoms complained of is the rapid heart action and palpitation after physical or emotional excitement. In a series of eight cases recently under my care, this, together with the muscular weakness and nervousness, was the first symptom evident to the patient. The tachycardia was the very first single symptom noted in these cases. The heart action varies from ninety to two hundred and twenty-five beats per minute. In one of my patients the pulse was 180.

Heart murmurs are common, generally best heard at the apex and transmitted to the axilla, due doubtless to anemia and to muscular inefficiency.

Pulsation is often seen in the carotids, and venous pulse may be observed. The blood pressure is variable. In six of my eight cases there was hypertension.

Eyes.—Protrusion of the eyes is one of the cardinal symptoms going to make up the so-called triad of symptoms—goitre, tachycardia and exophthalmos—and it is this that has given to the disease the name most familiar to American writers. It comes on comparatively late, and is present, according to *Osler*, in from two-thirds to three-fourths of all cases. In my series, it was exceedingly well-marked in one, quite apparent in three, slightly marked in one, and in the other cases noticeable only on close observation.

The staring, with infrequent winking, is known as *Stelwag's Sign*. *Graefe's Sign* is a lack of agreement between the motion of the lid and the raising or lowering the line of vision. This sign was noted in some of my cases.

Nervous Symptoms.—The nervous system in Graves' disease is always abnormal, and in my cases, as in fact in most cases, is the seat of some of the earliest symptoms. The patients are spoken of as being "nervous," and they present symptoms of mental irritability, excitability or restlessness. In fairly well-marked cases, one can make a diagnosis at sight as the patient enters the office by the exophthalmos, though slight, and by the nervous excitability and agitation of the patient.

Muscles.—One of the most characteristic symptoms is muscular tremor. There is both a fine tremor which is scarcely appreciable and best brought out by observing the fingers in the spread hand, with the arms extended and fore-

arms at right angles, and a coarse tremor of the extremities or even of the whole body which may, as I have observed it to do, interrupt and render well-nigh impossible such exercises as writing and coarse needle-work. Tremor has been evident in all of my own cases.

Muscular weakness, especially in the lower extremities, is another characteristic symptom. All of my cases have come complaining of muscular weakness as an early and sometimes only symptom. One patient could scarcely walk at times without aid, and had to be assisted into her bath tub, while on one occasion she had sustained a fall in her room on account of weakness in the knees.

Skin.—The skin often shows many changes, noticeably heat and moisture and sometimes pigmentation.

Digestive Organs.—Digestive disorders are often seen, and in a most recent case "dyspepsia" was the symptom from which the patient sought relief, having no idea of the true nature of her disease.

Kidneys.—Albuminuria and hyaline casts are seen if the heart is much dilated. A recent case had been treated as a case of acute Bright's on account of the urinary findings. At that time rapid heart action, nervousness and muscular weakness were the only symptoms evident. The patient, a woman, came under my observation about six weeks later presenting a pronounced tremor and well-marked exophthalmos. She was so nervous that she could scarcely write, and the exaggerated coarse tremor made needle-work out of the question.

While Graves' disease presents quite a variety of symptoms which may occur in a number of combinations, let me emphasize the fact that we should make our diagnosis when possible before many of these symptoms appear, for, in fact, in many cases only a few of them are *ever* manifest. On the authority of *Ochsner*, and quoting his exact language, "we want to assert that with the presence of tachycardia, together with even the slightest degree of exophthalmos or enlarged thyroid gland, a positive diagnosis of Graves' disease can always be made." This, says *Ochsner*, is the only class of cases likely to be overlooked by the clinician who has seen but few well developed, typical cases.

There are three theories regarding the pathogenesis of Graves' disease; and they are presented here because each possesses a kernel of truth, and each has contributed something to a

clearer conception of the nature of exophthalmic goitre, and has enriched the therapy of the disease.

The *hæmatogenous theory* emanated from Basedow, the first German exponent of the disease, who taught that it was due to a faulty admixture of the blood. The arguments supporting this theory were its relative frequency in females, its usual incidence in youth, its frequent association with menstrual disorders, and the belief that the patients were usually anæmic or chlorotic.

The *neurogenous theory* sought to localize the disease in the cortex, but failing thus to account for the symptom complex, the advocates of this theory adopted the constitutional or neuropathic theory, and in support of their views submitted the hereditary and family occurrences of the disease, its acute development after severe physical or psychical shocks, especially fright, grief or other serious emotional disturbances, and its frequent coincidence with hysteria, neurasthenia, epilepsy, chorea, etc. One of the severest cases I have ever seen came on almost suddenly, in an apparently healthy woman, following dancing during the Christmas holidays.

Finally, and in chronological sequence, we have the *thyrogenous theory*; and it is Möbius to whom we are indebted for placing this theory upon a pathological basis. He held that the disease is an intoxication of the organism from the pathological activity of the thyroid gland.

Thompson points out that in connection with certain types of thyroid hypertrophy we have, in addition to the struma, the incidence of certain phenomena—viz., exophthalmos, tachycardia, tremor, nervousness, etc., and that there is a fairly definite parallel between the increased amount of functioning thyroid tissue and absorbable material, and the degree of severity of these symptoms. But there are notable exceptions to this rule. Specimens of the gland removed by operation always reveal at least a portion with the typical pathological structure of Graves' disease, even though the presence of a goitre could not be determined. In these cases, Ochsner points out that there is often a discrepancy between the *extent* of the goitre and the *severity* of the symptoms. He remarks that just as a minute quantity of any one of a number of active drugs, when introduced into the circulation, produces violent symptoms, so the secretion from a very small portion of diseased tissue in a thyroid gland may produce all of

the symptoms of Graves' disease. He also believes that the intermittency of the symptoms and the varying degree of severity frequently observed may be due to the discharge of varying quantities of the poison, or to the absorbability of the secretion, or possibly to the condition of the absorbable tissue in the gland. These conditions are possibly controlled by mental or physical influences. In one of my own cases I have been struck with the discrepancies in the measurement of the gland; and in this particular case the other symptoms increased or decreased *pari passu* with the size of the goitre.

Eulenberg asserts that it is not enough to assume a hypersecretion to be the cause of the damaging effect upon the organism in Graves' disease, but that it is necessary to show that it is altered in character, a change due no doubt to the anomalous nervous influence upon the thyroid gland, similar to well known anomalous influences of other glands—for example, the paralytic saliva of the submaxillary gland after division of the chorda. Experiment and clinical observations show that the glandular secretion is altered qualitatively as well as quantitatively, owing to the altered blood composition. For instance, there is a decreased amount of iodine in the goitre of Graves' disease; and again, the urine of affected rabbits is more toxic than that of healthy rabbits.

There are abundant clinical and experimental reasons for believing that the toxic material generated by the diseased thyroid gland exerts an influence particularly upon the nervous system. In the normal thyroid gland, we perhaps have a protective organ for the central nervous system. When this antitoxin is absent by reason of an altered secretion, it may be assumed that the intoxicating effect of the product exported by the gland affects all parts of the nervous system, and has a selective affinity for the nerve centers, especially those in the cortical regions which are endowed with higher psychical activity, thus producing the neuropsychoses which are so frequently seen in Graves' disease.

To recapitulate, following closely the theories and nearly the exact language of Eulenberg, we would say the pathogenesis of Graves' disease is:

1. The abnormal quantitative and qualitative composition of the blood.
2. The abnormal secretion by the thyroid

gland of a specific intoxicating glandular product.

3. The neurosis or neuropsychosis depending upon autointoxication, and subsequently upon the cachexia which is so frequently met with in severe forms of exophthalmic goitre combined with a local affection of the gland.

These theories as to the pathogenesis of the disease have each affected the therapy of the disease. The *hæmatogenous theory* suggests the use of measures which would improve the altered blood and build up the impaired constitution, such as the exhibition of iron, quinine, strychnine and ergotin, wholesome food, baths, proper exercise; and of special importance, rest, often absolute rest, in bed. The *neurogenous theory* has given us electricity and psychotherapy, which in some instances has produced excellent results, a proper estimate of which will be given in the paper following the reading of this. The *thyrogenous theory* has given us a specific therapy, and has suggested the operative treatment of the diseased gland.

A large number of organotherapeutic specialties have been introduced, but most of them have been found to be disappointing. Perhaps the most promising of recent products is Beebe's serum. The treatment I have used during the past nine months, and which has given me most gratifying results, consists, as suggested by Forcheimer, in the administration of the hydrobromate of quinine in five-grain capsules, four times a day. If there is not a decided improvement in the pulse rate within forty-eight hours, add one grain of ergotin to each capsule. Thus far I have not seen a case which did not show a decided reduction in the pulse rate within forty-eight to seventy-two hours. In one of my own cases the pulse rate was reduced from 180 to 100 within eight days. No other treatment was given this patient except fifteen-grain doses of sodium bromide at 5 and 8 o'clock P. M. for the first few days; and she continued to attend to her household duties during the entire treatment. At the present time her condition is almost normal.

In one other case the patient had a pulse rate of 160 when admitted to the *King's Daughters' Hospital* where she was placed in bed under the care of a special nurse. Violent palpitation had made her highly nervous; in fact, for several months she had not known what it was not to be conscious of her heart action. The third night after the treatment was instituted she

awoke, and not feeling her heart beating, called her nurse in alarm, fearing it had stopped.

The nervous symptoms are always speedily relieved, and in my cases, the muscular symptoms share in the improvement induced by this treatment. None of my cases have been under observation sufficiently long for me to express an opinion as to the final results; but all who have taken the treatment have been markedly benefited.

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VENESECTION—ITS USES AND ABUSES.*

By COURSEN BAXTER CONKLIN, M. D., Washington, D. C.

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In treating a subject such as venesection, which has, for the last two thousand years furnished such a fertile field for writers, it is obviously impossible to advocate its use in any disease in which it has not been recommended, or perhaps, equally as impossible to point out abuses to which it has been subjected that have been allowed to remain latent. It shall be my endeavor, however, to show that, as our progenitors in medicine erred in over-estimating its uses, we, to-day are restrained by the chains of the resulting prejudice, and in our practical discontinuance of phlebotomy, neglect an agent of relief that should stand with its uses properly defined well up in our armamentarium of combating disease.

Can we wonder a great deal at the cursory treatment of the subject of blood-letting in our modern text-books and our schools of medicine when we stop to consider the frightful results that must have followed its general empirical use, and how not only the sick were attacked by the lancet, but those enjoying perfect health very frequently submitted to a vernal bleeding. Apparently all were oblivious to the truism attributed to the immortal Virchow, "Blood is Life."

It might be interesting to give the ideas of representative men concerning phlebotomy, during the long years of its history, which can be

*Read before George Washington University Medical Society.

largely held responsible for its present status.

*One of the earliest instances of its employment was mentioned by Homer in his *Odyssey*. Podolarius, one of the Greek physicians who accompanied the Trojan Army, being cast on the shores of the coast of Syrna, on his return home from Troy, was fortunate enough to win the hand of the daughter of King Damaethus by reviving her, through venesection, from the effects of a fall from a house top. Mythical as this story may be, it shows that blood-letting was used in Homer's time or about the ninth century B. C.

*Hippocrates, living in the third century, B. C., is credited with bleeding freely to incipient syncope in cases of "pain, inflammation and ardent fever." He was very careful to select a vein near the seat of trouble.

*Herophilus bled in painful inflammatory conditions. Our historian, Dr. Sketch, writing in 1819, characterizes him as being rather timid in its use.

*Galen, who contributed so much to medical literature is reputed as using phlebotomy freely in fevers and inflammatory processes. He is given the credit for curing a case of typhus fever by bleeding. He was as careful to select an adjacent vessel to the inflammatory area, as was Hippocrates.

†From Galen's time to the sixteenth century, the influence of an Arabian school of physicians held sway. Their plan was to bleed slowly from the foot on the opposite side from the seat of pain.

‡Sydenham (1626-1689) was fairly conservative for his time. He says, however, "In my treatment of pleurisy, I have the following aim in view, to repress inflammation. For this reason my sheet anchor is venesection." Plague, dysentery and measles were included among the diseases which he treated by bleeding.

‡Cullen (1710-1790) who lived at a time when blood-letting was much in vogue, says, "When it is doubtful if more (blood) can be with safety withdrawn, some may still be taken by cupping and scarifying."

‡Gregory (1753-1821), a professor at the

University of Edinburgh, cites a case in his practice in which he withdrew ninety-seven ounces of blood in three consecutive days, strangely resulting in a "cure" of his patient.

†Marshall Hall, that eminent investigator who lived in the early part of the last century realized that very often lives were sacrificed through injudicious venesection. He made tables of diseases and the amount of blood that could be withdrawn with safety in each. In regard to its use in apoplexy, he says, "I have known seventy ounces to be taken in a sitting posture in the tendency to apoplexy, without syncope." He bled freely in inflammatory processes, making the statement that "in the case of inflammation no one would think of trusting the safety of the patient to any other remedy than blood-letting."

‡Francois Magendie (1783-1855) is quoted from his essay on "The Blood" in Dr. Joseph G. Smith's most interesting article on the History of Blood-Letting as saying, "It is common inquiry whether in cases of pneumonia of the right lung, we should bleed at the right side; or in cases of the left lung affected, at the left," showing that there was still a question in the professional mind whether the Hippocratic method or that of the Arabian school was the more efficacious. To show how thoroughly empirical and without any scientific foundation was its use Magendie says, "Suppose a case in which a variety of therapeutical measures have proved unavailing, a consultation of medical celebrities is, of course, held and upon what do you suppose the deliberations sometimes turn? Upon the propriety of opening a vein in the right arm at the same time as another in the left foot."

Taking such statements and methods of use as these we can well imagine the thousands that died by the hemorrhage route; from the lack of any knowledge of asepsis, the almost inestimable number of infections resulting in death or permanent deformity, and, from the use of the general term inflammation, the general inability prevalent to differentiate inflammatory processes. This inability to make diagnoses together with a lack of knowledge concerning the physiology of the blood circulation, of course, led to a purely empirical use.

*"Medical and Physical Journal," London, Vol. XLII, pp. 353-360. The History of the Use of Blood-Letting as a Remedy in Disease. Dr. A. Sketch.

†"British Medical Journal," Vol. II, pp 67-70. On the History of Bleeding and Its Disuse in Modern Medicine. Dr. W. Mitchell Clarke.

‡Blood-Letting in the Treatment of Disease, "Glasgow Medical Journal," Vol. LVI, pp. 321-341.

†"Practitioner," London. Vol. LXXXII, pp. 321-331. Dr. Marshall Hall on The Decay of Blood-Letting. By D. A. Power.

‡"Johns Hopkins Medical Bulletin," Vol. XXII, p. 311. An Historical Sketch of Blood-Letting. By Dr. Joseph G. Smith, Sr.

It seems that a method of treatment which held the stage for two thousand years could not be without its virtues. Writers at the time of the transition to its present status frequently explained the decay of the art of the lancet by saying, "The type of disease and individual has changed," claiming that the 'sthenic' type no longer existed. Shall I at this time in setting forth that blood-letting is useful and a not to be neglected therapeutic measure say that "we are having a reversion to the former type of individual and disease"? No, it is rather because (1) our methods allow us comparative accuracy in diagnosing diseases; (2) we have at our command that most excellent of blood diluents and substitutes, normal saline solution; (3) we are well versed in aseptic methods, and, lastly, we are no longer satisfied in using methods of treatment which clinical experience alone proves of some value, but we look largely to the *why*, for their favorable results. Our possession of these four means which our forefathers in medicine lacked, should certainly assist us in loosening the shackles of prejudice and give venesection its rational place in the field of medicine.

The usefulness of venesection depends upon its closely allied mechanical effects of depletion and elimination which are obtained in the most direct and rapid manner. I would make the general statement that in any condition having an urgent need for the depletion of the vascular channels or in any condition with sufficiently high blood-pressure urgently requiring the elimination of deleterious material from the circulation, our first resort should be phlebotomy, and in the latter instance advantage should be taken of the open vein to allow to flow intravenously, normal saline solution.

Of the conditions in which venesection should be performed with a primary idea of depletion I would name cerebral hemorrhage, and cardiac conditions resulting in an overloading of the lesser circulation. In the plethoric individual suffering all the distressing effects of a cerebral hemorrhage, why should we temporize in attempting to reduce the excessive "vis a tergo" existing through the bowel, sweat glands or through the vaso-motor system, by the pressure lowering nitrites, when we have a most direct means at our disposal, blood-letting, and what is better have the total amount of depletion under our immediate control? The mechanical effect of venesection in those dys-

pneic, cyanotic individuals with an enormously enlarged right heart, whether caused by the ravages of pneumonia or a cardiac insufficiency should be immediately evident, and its use affords us about the only means of relieving our patient, who is generally in extremis. I would employ this method of relief in these latter conditions without being deterred by the condition of the pulse.

With conditions requiring its eliminative action primarily, I would classify uremia, puerperal eclampsia, gas poisoning and pneumonia. We have therapeutic measures; such as promoting diaphoreses, producing watery diarrheas (and when it is possible to use the kidney, increasing the flow of urine by diuretics), which we employ very often in combating toxemias of the uremic and puerperal eclampsia type, the idea being elimination. *Dr. Ch. Bouchard, a distinguished French chemical and physiological investigator in his lectures on auto-intoxications in disease, as translated by Thomas Oliver, states, "It is certain that we remove from the economy more extractives by bleeding than by any other channel, the renal tract excepted, for a bleeding of 32 cc. removes from it as much as 280 cc. of liquid diarrhea does, or as 100 litres of perspiration." The extractives mentioned certainly cover toxins or end products of metabolism which a diseased kidney cannot excrete.

It would seem then, that surely in conditions such as uremia and puerperal eclampsia, in which our patient is overwhelmed by circulating excrementitious products which a defunct kidney fails to excrete, the allowing to flow of a few ounces of blood would accomplish more efficiently and rapidly the object sought than purging and sweating.

In gas poisoning, causing unconsciousness with stertor, venesection again holds out for us *the* therapeutic measure. There is existing a condition of asphyxia which from stimulation of the vaso-motor centers causes an increased blood pressure. The asphyxia results from the affinity of the hemoglobin in the blood for CO of the gas. They unite to form a stable compound or met-hemoglobin. This compound acts decidedly worse than a foreign body circulating in the blood channels.

Bleeding causes a reduction in the total amount of this deleterious matter. I have

*Lectures on Auto-Intoxication in Diseases, by Ch. Bouchard. Translated by Thomas Oliver. 1906. Pp. 138.

already mentioned the use of phlebotomy in the latter stages of pneumonia, with a dilated right heart, for its depletive effects. In its early stages with the high bounding pulse, I think we could very often favorably influence the course of the disease by employing this therapeutic means with the idea of eliminating circulating toxins. As we are learning more concerning pneumonia, we are coming to regard it as a general infection with a localized manifestation in the lung. By bleeding then, we would reduce the gross amount of circulating toxins. The depletive effects at this time would accomplish most efficiently the objects sought by the hot foot bath with ice to chest—viz., an equalization of the circulation. The results of venesection in cases requiring elimination of poisonous substances from the blood, we find then to be the reduction of the *total* amount of the circulating toxins. The amount in circulation, however, remains relatively the same. By taking advantage of the open vein to supplant the blood withdrawn by normal saline solution, the percentage of poisons remaining is reduced, and we have a most favorable action on the overworked and very often diseased kidney.

I have used venesection frequently in treatment of uremia, gas poisoning and apoplexy, only failing to use it in other conditions named because of lack of suitable cases, but I well realize its value and expect to use it at the first opportunity. While resident physician at the Casualty Hospital, years 1907-08 (in service of Dr. D. Olin Leech), I used this method of attack as routine in conditions as outlined. Six cases of profound coma from illuminating gas recovered under its use and I often felt well repaid in noting signs of returning consciousness in the plethoric apoplectic, or in the stertorous uremic. In advocating venesection in the above-named conditions, I would not, of course, be understood as recommending it as the only treatment, but as the treatment not to be neglected.

A brief outline of technique employed is as follows: The area over the ante-cubital fossa is most thoroughly surgically cleansed. A band of gauze is tied around arm above the elbow, allowing distention of superficial veins, but not tight enough to impede arterial circulation. An incision is made through skin about 2 cm. long, parallel to and close enough to median cephalic vein to allow its being pulled over vein. Vein is freed in fascia, a hemostat serving admirably

for the purpose, and a double strand of silk is passed under vein by hemostat and cut; then one is moved proximally and the other distally and are loosely tied about 2 cm. apart. Vein is then snipped with scissors. Blood which is allowed to flow should be measured; 8 ounces being a fair minimum average for one bleeding. If symptoms are sufficiently urgent, a second bleeding can be readily done. The upper ligature on vein is in position to hold intra-venous tube for salt solution, the lower to control hemorrhage. In cases of extreme emergency, in which there is no need for salt solution intravenously, an incision obliquely through skin across vein can be made, the flow of blood being controlled by an aseptic gauze pad.

There can be but little doubt that venesection has been allowed to remain in comparative disuse on account of prejudice, and largely on account of prejudice existing in the lay mind, which was born of the abuse to which it was subjected in the past. I have heard the advice given to the young man in the profession, that if he would hold a large clientele and stand well before the laity, he should cater to this prejudice, as in some cases the patient would die and he would be blamed for the death, because he had the temerity to bleed. But should we allow even such a strong factor as popular prejudice, based, as it is, upon abuse in the past, to withhold the hand of him who has an opportunity within his grasp to remove the cause of the apoplectic's stertor, or the uremic's convulsions, in, as we have seen, the most rapid and efficient manner? After all, results are for what we are striving, and we can say to the young man in the profession, and, in fact, to the profession at large, that the size of a clientele can never be impaired by the attaining of results such as should accrue from the opportune employment of one of the oldest and we must say most abused modes of treatment known to our honored profession.

May our schools of medicine and the textbooks of the future find a place for the proper exposition of its merits.

1342 R Street, N. W.

Dr. J. McCaw Tompkins.

At the meeting of the Board of Visitors of the Medical College of Virginia on the 30th of May, Dr. J. McCaw Tompkins was appointed Professor of Diseases of Children to succeed Dr. C. A. Blanton, resigned.

CONSERVATISM IN OVARIAN OPERATIONS.*

By H. STUART MACLEAN, M. D., Richmond, Va.

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The simplicity of so many ovarian operations, particularly ovariectomy, has increased and popularized them to such an extent that observers and conservative surgeons have been led to consider very carefully the effects of these operations, and to study in connection therewith the functions of these organs, which have been treated so negligently or thoughtlessly in the past. It is evident that the ovary is not an organ to be removed on account of its possessing no material usefulness, or because its function is not material to the preservation of physical and mental health.

The operation of so-called normal ovariectomy as recommended by Battey has been relegated to well-deserved oblivion, and the few conditions in which it might now even be considered have alternatives of medical treatment or other operative procedures which give better results. In this abandoned operation, often the only normal phase of it was the sacrificed ovaries.

The functions of the ovary embrace not only ovulation, and its influence upon menstruation, but the formation and liberation in the general circulation of an internal secretion similar to that secreted by the thymus, thyroid, spleen, testes, and other ductless glands, and, knowing the importance of these organs, although as yet we are but beginning to understand the exact nature of their different secretions, the demand for conservatism is all the more urgent in operating upon the ovaries.

Every physician is familiar with the distressing symptoms which too often follow complete removal of both ovaries and the induction of artificial menopause. Experiments have demonstrated that in such cases the administration of an ovarian extract or an allied organic remedy such as thyroid has a decidedly beneficial effect, and this fact emphasizes the wisdom of making an effort to spare ovarian tissue, trying to see how much may safely be left, rather than how much may readily be removed. Not only is this internal secretion of definite value to the whole body, and, apparently, in particular to the nervous system but the psychic value of

menstruation is a potent factor in maintaining the nerve equilibrium in many such patients. Whatever the local effect upon the generative organs, and the influence upon the general circulation, it is evident, as Howard Kelly wisely says, "that so long as its cyclical changes persist, they hold most important fundamental relations to the well-being of the body at large; and, while we are as yet unable to state what is definitely accomplished by this act * * * we do know that sudden artificial induction of the menopause is often a source of extreme and lasting discomforts. With the healthy performance of her functions in the recurring monthly fluxes, ovulation, and the possibility of conception, lie, though the woman may be unconscious of it, some of the deepest well-springs of her happiness."

Experiments first demonstrated and further custom has confirmed the fact that small portions of healthy ovarian tissue may be left in doing ovariectomy with maintenance of the recognized functions of the organ, as evidenced by the continuance of menstruation, the absence of exaggerated nervous symptoms, and the recurrence of conception. Furthermore, it has been demonstrated that a small piece of ovarian tissue may be implanted in the fold of a broad ligament, slipped beneath the peritoneum, or even embedded in the abdominal wall, with benefit to the patient. During the past ten years, in some several hundred ovarian operations, the writer has never removed both ovaries completely except for malignant disease. My invariable rule is to save as much as possible of the healthiest ovary, and leave it either in its normal position, or tacked to the posterior aspect of the broad ligament or even left in an adventitious bed where it may have been attached by nourishing adhesions.

We have seen the time when ovaries were removed because they were found firmly bound down in the pelvis by dense adhesions, on the assumption that their function had been interfered with and their nourishment impaired to such an extent that they could never regenerate, and become normal again, and should, therefore, be eliminated. We know now that such is not the case. An ovary so affected has only to be released and possibly sewed in place upon the broad ligament to speedily regain a normal condition, and normal function.

Then there is the ovary or ovaries surrounded

*Read before the forty-first annual session of the Medical Society of Virginia, at Norfolk, October 25-28, 1910.

by or buried beneath inflamed tubes. Here, again, there is no reason for the removal of a healthy organ because of its bad associations.

In cases calling for hysterectomy for whatever condition, it is too frequently the rule to remove both tubes and ovaries. Within the past few months, I have seen eight or nine such hysterectomies, done by skilful operators, in which both tubes and ovaries were perfectly healthy. There is no good reason for removing a healthy organ under such circumstances. While it is true that in the removal of the uterus, one of the functions of the ovary is permanently terminated, yet we should remember that it has other functions, and our duty is all the greater to leave an ovary, or at least a portion of one, because we do not know the exact nature or extent of these functions. It adds very little, if anything, to the operation, and in fact, it is as easy, if not easier, to leave an ovary than to take it out in this operation. I would go further and say that such a course should be followed irrespective of the age of the patient, because while we know that the more manifest functions of the ovary cease with the menopause, yet we do not know but what its internal secretion continues throughout the entire life of the patient.

The cirrhotic ovary of some years ago was a frequent excuse for the sacrifice of these organs, and just because an ovary looked small and felt hard, it was seized upon as a culprit upon which to saddle an indefinite train of symptoms as readily referable to the brain as to the pelvis. Such organs are not removed now. There is probably such a thing as cirrhotic ovary, but nowadays such an ovary is apt to be looked upon as a rarity, rather than an excuse for extirpation.

Finally, we have the cystic ovary, varying from minute collections of fluid about one-half inch in diameter to the immense multilocular cysts, weighing many pounds. In the larger of these tumors, there will always be found at the base or pedicle of one or the other ovary some ovarian tissue, which can be included in the "button" above the ligature, or saved by dissection and turned into the slit in the peritoneum as the edges are whipped together.

In the case of a smaller cyst or cysts, these can be excised, making the incisions or dissections in such a manner as to slope the edges downward and inward so that the sides may be

readily approximated by suture. If the cysts are too small to justify excision, it is sufficient to open each cyst and empty it, wiping it out roughly with a small piece of gauze held in an artery forceps, or scraping it out with the knife blade to obliterate the sac. These small incisions need not be sutured unless there is free oozing following the obliteration of the sac, which can be stopped by a fine suture of iodized catgut placed through the edges of the incision, or as a mattress suture through the deeper structures. When a considerable portion of the ovary is excised, the edges should be approximated by buttonhole or interrupted sutures. It is true that by following this conservative rule we cannot be sure of uniformly gratifying results. I believe here that the error lies more in diagnosis than treatment. In the past we have been too prone to blame the pelvis as the cause of symptoms which we do not wish to ascribe rightly to neurasthenia or temperament, or which we do not study with sufficient thoroughness to arrive at such a diagnosis. The only valid objection which can be raised is that of the danger of recurrence in conservative treatment of small cystic ovaries.

It is true that such a condition may arise, and that an ovary from which small cysts have been removed or cysts incised, may subsequently develop extensive tumors. The fact remains, however, that such a condition rarely follows the conservative operations, nor are adhesions liable to follow the conservative method.

It is proper that patients about to be operated on for pelvic trouble should have explained to them the simpler phases of conservative work on the ovaries, and they should be given the right to say whether ovarian tissue should be sacrificed or saved. When properly stated, no patient will accept the alternative of a radical removal, but will invariably prefer conservative treatment, even with the possibility of later recurrence.

406 West Grace Street.

THE RELATION OF THE TONSIL TO SYSTEMIC DISEASES.*

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At the present time, study and research—as far as the tonsil is concerned—has been very

*Read before the Cumberland Academy of Medicine, at Cumberland, Md., February 15, 1911.

limited. Men who have given their time and study to the tonsil question have studied mostly the relation of the tonsil to the infectious diseases, with the tonsil as the portal of infection. Very little has been accomplished and very little experimenting done to find out the function of the tonsil, or the fact that the tonsil has a definite secretion. This is an important question and would be very important in the study of the relation of the tonsils to systemic diseases, if we did know it.

We know that the tonsils are made up of lymphatic tissue and that it is connected by the lymphatic chain with the vital organs of the body. They are also in direct connection with the blood stream. Their situation in the pharynx, combined with the fact that twelve to fifteen crypts open on the exposed surface of the tonsil, render it more capable of becoming the portal of infection, for, as we know, the mouth contains numerous amounts of bacteria and some of the most virulent types.

The first thing that would interest us, therefore, is the question, "Do the tonsils have a definite function?" George L. Richards addressed a series of questions to the prominent laryngologists of Europe and America in 1909, and one of them was as to the function of the tonsil. The tenor of seventy-seven answers to this question showed that the laryngologists had not concerned themselves very extensively with the physiology of the tonsil, or to its value, when normal, as an arrester of the entrance of pathogenic organisms, and that in early life it assists leucocytosis and gives off phagocytes, losing this power when diseased. Seven considered it a lymphatic gland of no special function, and nine considered it a producer of white cells in a state of health. Ten considered that it had no function and was of no physiological value; four that it secretes an antitoxin and furnishes moisture to assist in deglutition, and five considered its function unknown.

To my mind, the tonsils do have a function until the seventh or eighth year of life, because in adults, unless the tonsils are diseased, they will atrophy. Therefore, after the atrophy begins, the function of the tonsil must be lost. The bacterial plugs, by their frequent attacks upon the epithelial lining of the crypts, tend to produce an acquired immunity; but sometimes the bacteria are so virulent, the epithe-

lium in such bad condition, the vitality of the patient so much lowered, and possibly with a strumous diathesis, that the infection will take place. A paper in the *Journal A. M. A.* a short time ago stated that, by the action of the bacteria upon the tonsil tissue, an antibody was formed which would ward off infection.

When we consider the size of the tonsil, and the amount of surface that could be attacked by these organisms, it seems to me there would not be enough antibody formed to halt the bacteria and infection that would take place. The only way to definitely decide this matter is to carefully extirpate the tonsils, encapsulated, from patients of every age, obtain a series of cases at each age, and study them very carefully.

The relation of the tonsils to the cervical glands, I believe, is an established fact. The lymphatics of the tonsils drain into the submaxillary gland and thence into the deep cervical. Therefore, it would be very easy for an infection to pass through this channel. In fact, the greater number of the American and European laryngologists agree upon this phase of the question, and it is proved by the fact that the adenitis will disappear after removal of the tonsils.

The relation of the tonsils to tuberculosis is a very interesting field for experimenting. It is believed that from seven to ten per cent. of all diseased tonsils contain tubercle bacilli. The experiments of Dieulafoy, described by Ballenger, show that out of ninety-six guinea pigs inoculated with pieces of tonsils and adenoids fifteen developed tuberculosis—about fourteen per cent. These experiments not being conclusive, due to the fact that tubercle bacilli are supposed to be present on the surface, they are very suggestive. If it is admitted that the bacilli in the tonsillar epithelium gave rise to the tubercular condition of the guinea pigs, then we know that under proper conditions the tonsil becomes the portal of infection for the contiguous glands and organs.

Geo. B. Wood, after the examination of the cervical glands of seventeen patients who had died of pulmonary tuberculosis, says that a large percentage of the glands were involved, but no definite conclusion could be drawn as to the relative age of the lesion. An investigation of the anatomy of the lymphatic chan-

nels, however, leads him to believe that only exceptionally is there found a direct anastomosis between the deep cervical glands which drain the pharyngeal region and the supra-clavicular glands which are believed to drain this special part of the pleura.

Sometime ago Rosenburger, of Philadelphia, said he had found tubercle bacilli in the circulating blood. Ravenel and Smith, Burnham and Lyons, all failed to corroborate Rosenburger's findings. Schroeder and Cotten failed to find them in the blood of forty-two tuberculous cattle.

I believe that the tubercle bacilli can be carried by the lymphatics to the different parts of the body. Graber says that tubercular infection of the apex of the lung may take place by way of the deep lymphatic chain, the supra-clavicular glands, and thence to the parietal lymphatics, where an inflammatory exudate is thrown across to the visceral pleura. The tubercle bacilli travel across this inflammatory bridge and enter the apex of the lung. Ballenger says: "The question of chief clinical importance as relating to the tonsil is the course and termination of the tonsillar lymphatics which drain into the deep cervical, and from thence to the thoracic glands, and finally into the thoracic duct." The tonsil, therefore, under favorable conditions can transmit infection.

I believe there is also a latent tuberculosis in the tonsil. A tubercle bacillus may be caught up by a crypt, and the tonsils become hypertrophied and diseased, and the vitality of the patient lowered, the carbon dioxide in the blood increased, the red corpuscles decreased in numbers and hemoglobin, and the resistance to disease so lowered that the bacilli, either by the lymphatics or by being discharged into the pharynx, will cause an infection to follow.

While we feel almost sure that tuberculosis can be carried into the body with the tonsils as the portals of infection, still this fact remains to be proven.

The relation of the tonsil to rheumatism is another very interesting field for experiment, guarded by the fact that we do not know the etiology of the disease. Coakley says that sixty per cent. of the cases of acute tonsillitis suffer with rheumatism. It has been demonstrated that acute articular rheumatism has

been relieved, improved, and in some instances cured by the removal of the tonsils. Ballenger says that acute articular rheumatism is frequently observed following acute tonsillitis. Kocher believes that acute osteomyelitis will follow an infection through the tonsil. Investigations of various men show that while the tonsil may possibly be a protection against rheumatism, it is not probable, and they all believe it to be a decided menace.

The relation of the tonsils to middle ear disease and mastoiditis is very important, especially to the general practitioner. Few men seem to realize the importance of watching the tonsils in children, especially the pharyngeal tonsil in the infants. If the naso-pharynx of an infant becomes filled with the hypertrophied pharyngeal tonsil, the child is unable to breathe through its nose properly, cannot nurse properly, and will suffer from malnutrition. Dr. Wallin reported a case in which he found an infant suffering with colic, and after the removal of the adenoids, the child was cured and went along without another attack.

The fact that the Eustachian tube in infants is low, and is decreased in length and of greater patency, it is very easy for a middle ear infection to take place, mastoiditis, meningitis, and probably death.

In children the hypertrophied tonsils and adenoids cause a great deal of trouble and systemic disturbances. Just for a second look at the picture of a child suffering from this affliction:—Face drawn, look of horror upon countenance, mouth propped open, chest sunken, and shoulders bent, intellect "dulled," snores in sleep, has night terrors, and suffers sometimes with inability to hold urine, wetting the bed and clothes. In this condition the child is brought to the family physician.

In small children, especially between the age of two and four, the physician sometimes advises putting off the operation, telling the parents that they will probably outgrow the malady, or that the tonsils will shrink. Do not do it. You might as well wait for the sun to melt before the earth. They will not shrink. They should be removed at once. Systemic disturbances have started and alarmed the parents, and that is the reason the child was brought to you—to get your advice in the matter. If the child is left alone and those nasty

tonsils remain in the pharynx and naso-pharynx, in a short while the child will be brought back to you, and you will find your patient much emaciated and anemic, with one ear or probably both discharging, or you will find him suffering with acute mastoiditis. I wish to urge the importance of prompt removal of the hypertrophies in these cases, so that you will save your patients from systemic diseases, and probably death.

Dr. Hanau W. Loeb, of the University of St. Louis, says that acute nephritis is frequently a sequel of acute tonsillitis, and reports four cases in which scarlatina and diphtheria were excluded. He says that this is greatly overlooked by practitioners. This seems to strengthen the theory of septic absorption by the tonsils.

We can therefore draw the following conclusions:

I.—Research in the study of tonsils is very much needed.

II.—The tonsil may be a portal of infection under favorable conditions.

III.—The relation of the tonsils to middle ear disease and consequent diseases is confirmed by all.

IV.—The relation of the tonsils to the cervical glands is confirmed.

V.—The relation of tonsils to rheumatism and tuberculosis, while it is believed by many, is tubercle to be proven.

VI.—The relation of the tonsils to nephritis is possible.

HEMOGLOBINURIC FEVER.*

By W. B. BARHAM, M. D., Newsoms, Va.

Any of the sub-divisions of my subject, its history, pathology, etiology, diagnosis, prognosis or treatment, might furnish ample material for a paper. There is possibly no disease that taxes the skill and judgment of the physician more than hemoglobinuric fever. My experience with it has not been very great, but enough to keep me at times on the "anxious bench," and to cause me many sleepless nights. Any physician who has stood by the bed-side of a life-long friend and, after exhausting all his resources in treatment, has seen his life ebbing slowly away from the effects of this disease, would naturally grasp anything that would give him a deeper

insight into its treatment. If my paper can have the effect of provoking some profitable discussion, I will feel amply repaid for the time I have spent in its preparation. In discussing the subject, I shall confine myself to its diagnosis, prognosis, clinical history and treatment.

Hemoglobinuric fever, hemorrhagic malarial fever, malarial hemoglobinuria and black-water fever, as it has been variously called, may be defined as a disease of malarial origin, characterized by a distinct chill, followed by a bloody urine and icterus. I am persuaded, however, that the term, hemoglobinuric fever, is to a certain extent a misnomer. I am lead to assume this position on account of two striking cases that occurred during the past summer; one was in my practice, in which the patient, after having chills at three different times, suffered after each paroxysm from copious hemorrhage from the stomach. In another case, in the practice of a fellow-practitioner, the patient, after severe chill, had hemorrhages first from the nose and then from the stomach, resulting in her death. It is clear to my mind, that the congestion, instead of centering on the kidneys, liver and spleen, as in the most common form of the disease, centered in the nose and stomach. Perhaps, after all, the old term hemorrhagic malarial fever would be etiologically considered at least, the better term.

The symptoms of black-water fever are so characteristic that the diagnosis is usually made before the physician arrives. We have the history of a preceding malarial infection, the fever, vomiting, jaundice, and black urine. These are so striking that they may be considered pathognomonic. We do not always find the malarial parasites, but blood examination usually reveals mononuclear leucocytosis and pigmented leucocytes. There is another condition that might present difficulties and that is that rare affection known as paroxysmal hemoglobinuria, caused by chilling of some portion of the body. The attacks of this affection are, however, usually of short duration and seldom fatal.

I have never known a case of hemoglobinuric fever that did not present a history of several years residence in a malarial section, with repeated attacks of malaria in some form. Often we find the presence of malarial parasites, though not always. When these are absent, however, we can rely on the presence of pigmented leucocytes and mononuclear leucocytes.

*Read before the forty-first annual session of the Medical Society of Virginia, at Norfolk, October 25-28, 1910.

tosis. The two diseases, however, which are most frequently confounded with black-water fever are yellow fever and bilious remittent fever.

In his excellent work, "A Practical Study of Malaria," Deaderick gives two excellent tables on the differential diagnosis between hemoglobinuric fever and bilious remittent

fever, and between hemoglobinuric fever and yellow fever. So favorably am I impressed with this work by Dr. Deaderick, that I shall quote largely from it. He says that in localities where both yellow and black-water fever prevail, differentiation is often difficult, and he gives the following points of difference:

HEMOGLOBINURIC FEVER.

Endemic.

One attack predisposes.

Occurs usually after several years of residence

Malarial history always given.

Prodromata common.

Icterus intense, early, always present.

Conjunctiva jaundiced.

Hemoglobinuria.

Blood may show malarial parasites, pigmented leucocytes and mononuclear leucocytosis.

Bilious vomiting.

Hemorrhages uncommon.

Spleen usually much enlarged.

Increasing pulse.

Albuminuria from the beginning.

YELLOW FEVER.

Epidemic.

One attack confers immunity.

Attacks also new-comers.

May be no malarial history.

Prodromata uncommon.

Icterus usually slight, begins on third or fourth day; may be absent.

Usually congested at first.

Albuminuria, or hematuria.

All absent.

Vomit clear or black.

Relatively common.

Enlargement slight.

Pulse retards with stationary or increasing temperature.

Usually appears from the second to fourth day.

Some cases of bilious remittent fever present such striking points of similarity that the fol-

lowing table is given by Dr. Deaderick:

HEMOGLOBINURIC FEVER.

Onset sudden.

Jaundice develops rapidly and becomes intense.

Parasites frequently absent.

Albuminuria constant.

Urine colored by hemoglobin or its derivatives.

BILIOUS REMITTENT FEVER.

Onset slower.

Develops more slowly and is not so intense.

Parasites usually present.

Albuminuria not constant.

Urine colored by bile.

For a long time the diagnosis of black-water fever was obscured by the acrimonious war among clinicians as to whether the discoloration of the urine was due to the presence of bile or blood. It was not until the microscope cleared up the difficulty, that this question was solved and a rapid stride was made in the knowledge and treatment of this disease. Another point that aided materially in the solution of the question of diagnosis was the relative immunity of the negro to both yellow and black-water fever.

The prognosis of black-water fever is grave. Possibly the most dire symptom is the suppression of urine, and it is unfavorable in proportion to its early onset. When the daily quantity of urine excreted falls below 200 c.c., it is of serious portent. Dr. Mahlon Bolton, of Rich Square, N. C., who has treated more than 300 cases of black-water fever in a practice of twenty-five years, and whose opinion on account of his extensive experience is entitled to re-

spect, writes me that he has never known a case with suppression of the urine recover, and his experience in regard to this particular symptom coincides with mine. He put the mortality at 25 per cent. Should the patient, says Deaderick, be tided over a period of suppression, as occasionally happens, he usually dies during the convalescence of exhaustion, subsequent nephritis or embolism.

Of bad portent also is excessive and uncontrollable vomiting, interfering as it does, with the taking of proper nourishment and medication. Diarrhea may be considered salutary, provided it is not excessive, as it lessens the chances of uremic symptoms. Obstinate singultus forebodes the same evil that it does when it happens in other diseases. A remittent or intermittent temperature may be regarded as favorable. Somnolence, diminishing amount of urine, coma, epistaxis or other hemorrhage and algor, according to Deaderick, forebode evil;

the larger the share, according to the same author, taken by quinine in the causation of the disease, the more favorable the prognosis, provided the case is not further aggravated by this drug. The disease is more fatal when occurring in patients suffering from malarial cachexia.

Deaderick gives three lists, totalling 6,037 cases, with 1,268 deaths—a mortality of 21 per cent. In the first list of 1,821 cases with 472 deaths, treated with quinine, the mortality is 25.9 per cent.; in the second, 1,006 cases with 112 deaths, treated without quinine, the mortality is 11.1 per cent.; in the third list, treatment mixed or not recorded, there are 3,210 cases with 684 deaths, a mortality of 21.3 per cent. Thus it would seem that in the cases treated with quinine there was the greatest mortality, but could not this be due, in a measure, to the excessive doses in which this alkaloid was often given? I think so.

The clinical history of black-water fever is so characteristic as hardly to be mistaken for any other affection by the merest tyro. There is severe chill, followed by a rapid rise of temperature, which ranges from 102° in mild to 105° in grave cases; then comes a copious discharge of red, almost black urine. There is headache, pain in the back and epigastrium. Nausea and bilious vomiting add to the distress of the patient. There is great thirst, which is insatiable because of the vomiting. Palpation reveals enlargement and tenderness of the liver and spleen, especially the latter. In a few hours the clinical picture is completed by the appearance of jaundice. The patient is restless, his expression is anxious. In mild cases the duration may not be longer than that of an ordinary malarial paroxysm, the vomiting and pain disappearing. The urine gradually becomes clearer, and the temperature may fall below normal. The jaundice may last for a few days after the other symptoms subside. In severe cases there may be a fall of temperature, but never to normal. The vomiting never ceases and the urine never clears but becomes more scant. This condition of the urine portends nothing but evil, and, if it continue, uremic symptoms supervene and increasing coma ends the scene.

Nearly every case of black-water fever is ushered in with a distinct rigor, though the cold stage may be wanting, the attack beginning with fever and vomiting, or the black-water may precede other symptoms. In mild cases the

fastigium is reached early and the temperature recedes progressively to a little below normal, or it may be intermittent, remittent or irregular. The quantity of urine voided is variable. In mild cases it may not vary very much from that of health. The reaction may be slightly acid, neutral or alkaline, and always contains albumin.

Perhaps the most distressing symptom in black-water fever is vomiting, which is often uncontrollable. The vomited matter, after the contents of the stomach have been voided, consists of yellowish or green bile, or it may be, according to Deaderick, grass-green or a peculiar bluish-green, or very black, like the vomit of yellow fever.

In regard to the treatment it may be said that no bitterer nor more rancorous controversy has been waged than in this disease. The bone of contention has been quinine, some clinicians believing that quinine produces hemorrhage from the kidneys and causes black-water fever, do not give the drug. This was the position taken by Koch, who observed the disease in South Africa; others give it in excessive doses, and still others in moderate doses. As in most things, the middle course is the safer one. Deaderick has given us certain rules to govern us in the matter, which may be summarized by stating that the quinine should not be given unless malarial parasites are found in the blood; but as Dr. H. W. Lewis, of Jackson, N. C., pertinently remarks, if the average country physician waits for this blood examination and allows his patient to have the second hemorrhage, he runs a great risk of losing his patient. The consensus of opinion among clinicians seems to point to the moderate use of this drug in doses of ten to fifteen grains in twenty-four hours, according to the susceptibility of the patient.

In an excellent paper recently read before the Southside Virginia Medical Association, Dr. T. N. White, of Franklin, Va., made the statement that quinine should not be given, until the patient had been given calomel in sufficient doses to move the bowels freely, and for its diuretic action. This seems to be a very rational procedure and his experience in this particular seems to coincide with other physicians with whom I have consulted. We begin with one grain of calomel, and repeat it every hour or two, until we get the characteristic bilious stools. This treatment has also the advantage

of acting as a sedative to the stomach. It is my custom to give for the distressing vomiting, after the larger doses of calomel have acted, the drug in smaller doses—1-16 to 1-8 grain every hour, until the vomiting ceases. This, in my opinion, is better than hypodermics of morphia, which often aggravate this condition. I give it dry on the tongue or on a little cracked ice. I have seen very distressing cases relieved by this in a short time. One of the most valuable adjuvants in the treatment of this symptom is lavage. This should be used until the stomach contents come back clear.

In black-water fever the patient should be made as comfortable as possible. He should be kept in a recumbent posture, and the bed-pan should always be used; cold sponging and alcohol rubs are used to control the temperature; lemonade, egg albumin, chicken broth and buttermilk should be given in small quantities and repeated often. It is well to empty the bowels when we are first called to a case by a high enema, using a long rectal tube.

The question is often asked should we treat the hemorrhage from the kidneys. I answer emphatically, no. I regard this hemorrhage as Nature's effort to eliminate the toxins from the system and it should not be interfered with. I know that so eminent an authority as Anders, of Philadelphia, recommends the use of certain drugs for this condition, as ergot, tincture chloride of iron and turpentine. I would mention turpentine only to condemn it. If I were to give turpentine to a patient with black-water fever, and he recovered, I should think that the Lord was with him, and he recovered in spite of the bad treatment, and if he died, I should feel that I was almost a murderer. In this disease, everything should be done to keep the kidneys active. Water should be given at stated intervals as soon as the stomach will retain it. Normal salt solution by hypodermoclysis should be used early and as often as necessary. This procedure was first recommended by Dr. H. W. Lewis, of Jackson, N. C., though Laveran attributes the priority to Gouzien. The remedy may also be exhibited by enteroclysis, and it has been suggested that the solution should be used as hot as a patient can bear it on account of the beneficial effect, the warmth coming in close contact with the kidneys. Other remedies recommended for this condition are digitalin and spartein given hypodermatically. Dry-cups and hot-water bags should be used in the region

of the kidneys. The patient's strength should be supported in every possible way; strychnia should be used freely, and arsenic should be given to the point of tolerance.

The after-treatment is very important. The diet should be carefully looked after and should be restricted to the most nourishing kind. The kidneys are left in a very vulnerable condition and should be carefully watched and every safeguard thrown around them. Everything that would tend to chill the surface, such as drafts of damp air, getting the feet and other parts of the body wet, should be strenuously avoided. The patient should be put on quinine in small doses and Fowler's solution of arsenic, and this should be continued for some time.

Analyses, Selections, Etc.

Errant Tendencies in School Children.

LeGrand Kerr, New York, adverting to the sex question says that curiosity will make the child want to know; credulity will aid his ready acceptance of right or wrong impression; imitation will stimulate him to the acquisition of habit; imagination will enlarge his horizon, and unless all are recognized and marshalled under the forces of right instruction for right living, their possibilities for permanent physical, mental and moral damage are great.

If the child has always been dealt with patiently, and its confidences have been received in a sympathetic manner, there will be no difference when questions in regard to more delicate matters arise. But if accustomed to a prompt rebuff, or to inattention when bringing to the parent or teacher what to him was real and to his elders folly, and he has been turned away without sympathy or with mere tolerance, nothing open or frank may be expected from that child. The fault is not with the child.

It is our common experience that children of both sexes may reach maturity without being fully aware of the processes of procreation. More often they have very much distorted ideas in regard to the matter. Now, the question arises, "Is it right to allow a child grow up in ignorance or to become the victim of wrong impressions?" Many of these children grow up in ignorance because of their limited powers of observation in this line and their inability to draw inferences.

There is no doubt that much harm may be

wrought by ignorance of this kind or by implanting wrong impressions, and that dangers are undergone and calamity invited because of this ignorance. But, on the other hand, there is considerable danger in drawing attention directly to the functions which certain organs of the body may in the future be called upon to perform. Much of the purity of childhood is born of ignorance; the child does not think of impure things and, therefore, is pure-minded. Questions relating to the matter of sex are not in themselves impure; it is the environment or manner of handling that makes them so. The writer does not think it is a question as to how much information a child should have in these matters, as it is of how that information shall be obtained.

Usually, with parents there is a feeling of fear which deters them from handling the question; this fear is the result of considerations of modesty, or it may be that the subject is one so fraught with the possibilities of mistakes that the parent does not feel competent to handle it. It is just this absence of courage that causes most of the harm. In regard to the first reason (modesty), the child is bound, sooner or later, to acquire knowledge, and if not from the proper source than from a more dangerous one. Who is better equipped to handle this subject with the greatest delicacy and consideration for the best interests of the child than the father with his boy and the mother with her girl? Modesty about any question depends a great deal upon how the thing is handled. Usually, when modesty has been offered as an excuse, the parent has a wrong sense of this virtue. If the relation of the parent and the child has been right beforehand, the instruction made necessary by the child's inquiry will be of greatest value if it come from the parent.

But how will the problem be handled in those instances in which, for some reason, the confidence which should exist between parent and child has never been established, or has been strained? It is just as necessary that these children be set right and be protected. In such circumstances, it is well to refer the case to the physician when the parent sees that information is becoming necessary and he cannot give it. The physician should be made acquainted with all the facts beforehand, and then left to deal with the problem as the needs of that particular child may indicate—(*Medical Review of Reviews*, April, 1911.)

Asphyxia of the Newborn.

Freund describes an ingenious method of treating asphyxia neonatorum. He calls the method placental aëration. The placenta is delivered manually as soon as the child is born and is seen to be asphyxiated. The child is placed in warm water and the placenta held with the maternal surface upward, the cord not being cut as yet. A stream of oxygen is turned on the maternal surface of the placenta, whereupon the child recovers its color, the pulse comes up and respiration is established. Then the cord is cut.—(*Critic and Guide*, May, 1911.)

Diagnosis of Chronic Appendicitis.

Samuel Floersheim, New York, says that the symptoms of chronic appendicitis may be insidious in their onset, while in a few patients sudden, sharp attacks simulating acute biliary or nephritic colic, gastric ulcer or beginning inguinal hernia, have been observed.

The pain is usually of dull character referred to the seat of the disease according to the position of the appendix and the part involved. The pain may be referred, at first, to any portion of the abdomen, lower thorax or to the back on the right side on a level with the second or third lumbar vertebra. Nausea is usually of reflex origin and is present in the greater majority of the cases seen. Vomiting is less frequent and when present, is not severe. Diarrhea is seldom present; while in a number of cases, constipation is more or less annoying and bears no relation to the gravity of the disease; the constipation in quite a few of the cases dating from early childhood.

A feeling of lassitude, or of not being well is frequently observed; eructation of gas, especially in the neurotic, is often noted. The patients are usually well-nourished, the facies showing no sign of illness. Icterus has been observed in a few cases, believed by Hollander to denote a beginning or advanced necrosis of the appendix.

The right rectus muscle may or may not be tense during the quiescent stage, becoming rigid in proportion to the severity of the pain and the peritoneal involvement. This sign may also be lacking even during the height of a recurrent attack. The thickened appendix may be palpated and even outlined in thin subjects. Gaseous distention of the ascending colon, more or less severe, is a noteworthy sign.

Elevation of temperature and acceleration of

pulse were not frequently noted except in those cases accompanied by peritoneal involvement, sudden attacks of acute enteritis, acute constipation, gastritis, bronchitis or other acute complications.

In uncomplicated cases, the blood was negative; in the complicated ones, its value was great.

Bimanual examination often elicits many additional points of information in the diagnosis of chronic appendicitis from other lower abdominal and pelvic inflammations.

The disease must be differentiated from neuralgia of the skin covering the right iliac region (neuralgia of the eleventh and twelfth intercostal nerves), myalgias of the abdominal muscles in that region, inflammations, malignancies, elongations and habitual torsion of the cecum, abdominal angina, intussusception and malignancy of the ileum near the ileocecal valve, aneurysm of the right common iliac artery, internal hemorrhoids, beginning right inguinal hernia, pyelitis of the right kidney, prolapse of a small right kidney, cholecystitis, cholelithiasis, pylorospasm in a markedly prolapsed stomach, urinary cystitis, beginning typhoid fever with a history of one or more previous attacks of appendicitis, psoas abscess on the right side, deep, right inguinal adenitis; in women, ovaritis, salpingitis and inflammations and abscess formations of the uterus and adnexa on the right side. The possibility of appendicitis on the left side must be kept in mind, as also rare conditions, diverticula of the appendix, and intestines; and one must ever be on the alert to recognize the hysterical and neurasthenic patients with their multitude of complaints and exactness of description.—(*American Medicine*, May, 1911.)

City Hospital for Richmond, Va.

It has been recommended by the council committee on relief of the poor, that an appropriation of \$200,000 be made for a city hospital at Richmond, Va., to be run independently of the City Almshouse, with which the City Hospital has been associated. This action of the committee is to be commended, as every city the size of Richmond should have such a hospital, and especially is this the case, as all self-respecting citizens abhor the idea of being taken to the "Poor House," even when necessary to be taken to some hospital for "first aid to the injured."

Editorial.

Child Welfare Conference.

It is safe to say that those who attended the Child Welfare Conference in Richmond, May 22-25, know much more about the problems of child life than they did before. It could not be otherwise. Some of the most eminent authorities of the country mingled with the social workers of this State and interchanged views on the most practical, every-day questions with which they were confronted. A hopeful, determined spirit pervaded the meeting, despite the depressing nature of many subjects discussed, a spirit admirably evidenced in the resolutions finally adopted by the Conference.

These resolutions, drafted by Dr. William F. Drewry, of Petersburg; Barton Myers, of Norfolk, and Frank W. Duke, of Richmond, laid down broad principles of reform which will be presented to the next General Assembly of Virginia to charitable and correctional organizations in the State. Of the various resolutions presented, several had especial importance. Chief among these was perhaps the resolution calling upon the General Assembly to establish a State institution for the feeble-minded. Basing its action upon the fact that there are at least 3,000 feeble-minded persons in the State, many of whom are fertile and fecund women, the Conference voted that these were proper subjects of State aid and that their segregation and training were demanded alike by social and economic conditions.

Of equally great importance was the resolution insisting that the unfortunate mothers of illegitimate children be encouraged to nurse and to care for them. This followed the discussion in the Conference which revealed a fearful mortality in many of the foundlings' homes and an alarming tendency among those who have worked with these unfortunates to insist that the children be separated from their mothers, the Conference urged that infant mortality among these children would be greatly reduced and the moral life of the mothers much improved.

One session of the conference was largely in charge of the medical profession, and was devoted to a Discussion of the Child Before Birth and During Infancy. The former part of the discussion, in which Drs. D. S. Freeman, H. E. Jordan, McCaw Tompkins and Greer Baugh-

man participated, was one of the first of its kind held in the South and proved extremely helpful to the many delegates present; the discussion of Infant Mortality, planned by Dr. E. C. Levy and led by Dr. Frank M. Reade in Dr. Levy's absence was of unusual interest. On the morning of May 25th, Miss Garrett, of New York, and Miss Johnston, of Richmond, discussed sex Hygiene in a meeting presided over by Dr. Ennion G. Williams.

We are glad to learn that the State Conference of Charities and Correction plans similar meetings in other cities of the Commonwealth; and we bespeak for them the co-operation and support of the profession. They will undoubtedly work for great betterment.

Medical College Commencements at Richmond, Va.

As usual, the latter part of May was the occasion of the closing exercises of the University College of Medicine and Medical College of Virginia, at which time fifty odd men from each institution received their diplomas in medicine, dentistry and pharmacy, the bulk of the number in each case receiving the degree of M. D.

University College of Medicine.—The Alumni held their meeting on the evening of the 24th, in the Amphitheatre of the Virginia Hospital, at which time, Dr. E. Guy Hopkins, the essayist, read a paper on "Dietetic Treatment of Diabetes." Dr. F. C. Pratt, Fredericksburg, Va., was elected president of the Alumni Society for the coming year. Upon adjournment of this meeting, Dr. Stuart McGuire, president of the college, tendered the graduating classes and alumni a reception at his residence. On the 25th a luncheon was given at the Hermitage Golf Club, and the Commencement Exercises were held that evening at the Academy of Music, after which there was a reception to the graduates and friends of the school at the Westmoreland Club.

At the closing exercises, Dr. McGuire in speaking of the work done at the University College during the past session, especially commended the loyalty of the students in returning to this school in spite of the inadequate accommodations during the past year, as a result of the fire in January, 1910. He also spoke of the new building now in process of construction, which he stated will be unsurpassed in equipment by any medical school in the country,

though not so large as some. The address of the evening was by Dr. J. C. Metcalf, of the Richmond College.

Assignments of internes to the various hospitals were as follows:

Virginia Hospital, Richmond—Drs. F. O. Plunkett, C. C. Grove, S. B. Boone.

St. Luke's Hospital, Richmond—Dr. F. M. Dillard. Second appointment to be filled.

City Hospital, Richmond—Drs. O. C. Page, J. J. Hulcher.

Sarah Leigh Hospital, Norfolk—Dr. H. Harrison.

Danville General Hospital, Danville—Dr. O. R. Keiger.

St. Vincent's Hospital, Norfolk—Dr. J. H. Cutchin.

Sheltering Arms Hospital, Richmond—Dr. J. A. Patterson and W. L. Stevens, undergraduate.

Home for the Incurables, Richmond—E. Bancroft, undergraduate.

William Byrd Hospital, Richmond—B. T. Fields, undergraduate, and H. P. Moseley, undergraduate.

Gouverneur Hospital, New York City—Dr. W. M. Brunet.

Flushing Hospital, Flushing, N. Y.—Dr. F. G. Jarman.

Hygeia Hospital, Richmond—Dr. W. B. Porter.

Retreat for the Sick, Richmond—To be filled.

King's Daughters' Hospital, Portsmouth—To be filled.

Petersburg Hospital, Petersburg—To be filled.

Medical College of Virginia.—The seventy-third Commencement Exercises of this school were taken up with clinics and entertainments, which included a luncheon at the Memorial Hospital on the 29th, and a musical entertainment by the students that evening followed by a smoker tendered by the Adjunct Faculty. At the meeting of the Alumni Society on the morning of the 30th, interesting papers were read by Dr. Simon Baruch, of New York, and Col. Walter D. McCaw, Medical Department, U. S. A. Dr. J. M. Burke, Petersburg, Va., was elected president of the Society for 1911-12. The Faculty were hosts at the luncheon in the Pathological Laboratory, after this meeting. A Class Reunion Supper at the Commonwealth Club fol-

lowed the exercises at the City Auditorium that evening.

At these last exercises, Dr. Christopher Tompkins, dean of the faculty, told of how the Medical College of Virginia, which was the eleventh medical college established in the United States, has steadily kept abreast of the times in its aims and standards. Honorable R. E. Byrd was orator on this occasion.

Hospital appointments were as follows:

Memorial Hospital, Richmond—Drs. H. C. Smith, M. C. Edmunds, A. D. Tyree, Jr., T. N. Broadbush, E. B. Talbot, W. M. Winn, Jr., and G. E. Nance.

City Hospital, Richmond—Drs. R. E. Watts and William R. Calfee.

Retreat for the Sick, Richmond—To be filled.

Sarah Leigh Hospital, Norfolk—Dr. W. N. Thomas, and the other to be filled.

St. Vincent's Hospital, Norfolk—Dr. H. I. Land.

Protestant Hospital, Norfolk—To be filled.

Lewis-Gale Hospital, Roanoke—Dr. H. G. Tarter.

Johnston-Willis Sanatorium, Richmond—Drs. D. P. Scott, G. G. Hankins and Clarence Campbell.

St. Leo's Hospital, Greensboro, N. C.—Dr. H. H. Powell.

King's Daughters' Hospital, Portsmouth—To be filled.

Orthopedic Hospital and Infirmary for Nervous Diseases, Philadelphia—Drs. H. F. Munt, H. H. Harris and one other to be named.

United States Marine Hospital, Buffalo—Drs. J. P. Bowles and A. U. Tieche.

Preventive Medicine.

At the recent meeting of the Tri-State Medical Association of the Carolinas and Virginia, Dr. Jos. A. White, as his Presidential Address, read a most interesting and instructive paper on the above subject, which appears in the present issue of the *Semi-Monthly*. On the motion of Dr. Geo. Ben. Johnston, of Richmond, it was decided to give this paper as great publicity as possible, by having it published in medical journals in each of the three States represented in the Association.

As will be seen, Dr. White treats of the subject from the standpoint of what it has done, and what it can do, if the State will but recognize its obligations to the public. While

this paper demonstrates rather conclusively that in the near future there will not be much for the medical man to do, unless he happens to be a specialist, it still seems to be our duty as humanitarians to give the layman the benefit of our knowledge and experience in the prevention of the many ills to which flesh is heir.

We would call especial attention to the section on Ophthalmia Neonatorum. The inattention of physicians to render proper and prompt prophylactic treatment to prevent this disease, which has been and continues to be the source of so much unnecessary blindness among the people of this country, amounts almost to criminal negligence. Steps should also be taken to have our State Legislatures pass laws for the prompt registration of births, which would enable our Health Boards to assist in the prevention of this special form of blindness, annually thrust upon many hundreds of innocent people.

Triumph for Fakirs.

We were surprised to note from the recent decision of the United States Supreme Court that the present Pure Food and Drugs Act concerning the misbranding as to the composition of drugs does not likewise apply to the false *claims* made on labels. The law was tested in the case of Johnson, of Kansas City, who was indicted in the Federal Courts of Missouri in 1909, on the charge of violating the above act. Johnson, acting for a company, labeled his medicine with certain preposterous claims as to the cure of cancer.

Such a ruling as in the above case effectually throws down the bars to charlatans, in that it places no check on false claims they may make. In view of this situation, it is imperative that steps should be taken speedily to so change the Pure Food and Drugs Act as to cover this point.

The Medical Society of the State of North Carolina

Will convene in Charlotte, N. C., for its fifty-eighth annual meeting, June 20-22, 1911. Attractive entertainments have been planned by the local committee for the visiting members and those accompanying them. Those who have been fortunate enough to attend former meetings in the State of "the long-leaf pine" can thoroughly appreciate the hospitality that awaits them. The program gives a list of nearly one hundred papers on such a diversity of subjects

as to furnish something of special interest for each member in attendance.

The address of the president, Dr. C. M. Van Poole, of Salisbury, on "The Importance of Thorough Literary Training Prior to Entering the Medical Profession, and High Ideals After Entering the Same—Some Remarks as to the Work and Needs of the Society," promises to be most interesting as bringing up a subject upon which there has already been considerable debate in the medical profession.

The secretary, Dr. D. A. Stanton, High Point, N. C., will take pleasure in furnishing any information desired.

The Medical Society of Northern Virginia and the District of Columbia

Held its last meeting at Herndon, Va., May 17, 1911. Drs. Edward Copeland, H. P. Gibson, Frank Simpson, Homer A. Spitler, Ira Thomas and John Thomas, were elected to membership, and Drs. R. M. Slaughter and H. M. Clarkson, were made honorary members. At the completion of the business meeting, which included the reading of several interesting papers and the election of officers, the Society was handsomely entertained by Drs. Russell, Detwiler and Robey. The next meeting will be held in Washington, D. C., in November, 1911.

Officers elected for the ensuing year are Dr. F. M. Brooks, Swetnam, president; vice-presidents, Drs. E. L. Detwiler, Herndon, and J. B. Nichols, Washington, D. C.; recording secretary, Dr. A. G. Coumbe, Vienna; corresponding secretary, Dr. Charles S. White, Washington, D. C.; and treasurer, Dr. William I. Robey, Herndon.

The American Red Cross

Announces that, in connection with the International Conference of the Red Cross which will be held in Washington, D. C., in May, 1912, the Marie Feodorovna prizes will be awarded. These prizes, awarded at intervals of five years, represent the interest on a fund which the Dowager Empress of Russia established about ten years ago for the purpose of diminishing the sufferings of the sick and wounded in war. Of the three prizes to be awarded in 1912, the largest will be made for the best solution of any one of the set of nine subjects selected, irrespective of what the question may be.

Information may be obtained of Major Charles Lynch, Medical Corps, United States Army, Chairman Exhibit Committee, American Red Cross, Washington, D. C.

The Virginia Alumni Association of the Johns Hopkins University,

Which met in Richmond during May was of more than usual interest to the medical profession, owing to the fact that in the election of officers, Dr. Douglas Vanderhoof, of Richmond, was elected president, and Dr. Douglas Freeman, who has been active in health measures in this State, was made vice-president. Dr. Wm. H. Howell, Professor of Physiology Johns Hopkins University, was one of the principal speakers of the evening. In an interesting manner he outlined the future plans of the University, telling of its proposed move to a new site with the \$2,000,000 endowment recently received. A banquet was held at the Westmoreland Club after the meeting.

Association of Surgeons of the Norfolk and Western Railway.

The fourth annual meeting of this Association in Richmond, June 15th and 16th, promises to be as pleasant socially, as on former occasions, and a number of interesting papers on surgical subjects will be read. Sessions will be held at the Jefferson Hotel.

For the entertainment of the surgeons and members of their families accompanying them, a day-light trip will be given on the 16th down the James River to Norfolk, at which place sleepers will be in readiness for surgeons wishing to return to their homes from that point. Luncheon will be served on the boat.

News Notes of Richmond Doctors.

Dr. Robert C. Bryan has moved his office and residence to 301 West Grace Street.

Dr. McGuire Newton announces his intention to limit his practice to the diseases of children.

Dr. W. A. Shepherd is making a specialty of microscopical examinations.

Dr. Thomas W. Murrell left the latter part of May to spend about six weeks abroad. He expects to take in Dr. Ehrlich's clinic while on the continent.

Dr. J. R. Gildersleeve, who has been spending the winter months in this city, leaves early in June for his summer outing.

Catawba Sanatorium Soon to Receive New Applicants.

Dr. Ennion G. Williams, State Health Commissioner, has sent out notices urging upon persons wishing to enter the State Sanatorium for tuberculosis to make early application, as there are expected to be some vacancies in the institution soon. As patients are constantly improving and leaving the sanatorium, there should be no reason why suitable cases should have to wait long for admission at any time.

Army Medical Corps Examinations.

The Surgeon-General, United States Army, Washington, D. C., announces preliminary examinations for the appointment of first lieutenants in the Army Medical Corps on July 10 and September 5, 1911, at points to be hereafter designated. There are at present sixty-one vacancies in the Medical Corps. Applications must be complete and in the hands of the Adjutant-General at least three weeks before the date of examination. Those wishing to secure an invitation are required, among other things, to be between the ages of 22 and 30, and to have had at least one year's hospital training after graduation.

The Shenandoah Valley Medical Society

Held its quarterly meeting in Winchester, Va., May 24th, at which time the doctors of Augusta and Rockbridge Counties were admitted to membership, thus enlarging the bounds of the Society to include the whole valley of Virginia, and creating greater interest on account of the increase in numbers.

The evening prior to the meeting, Dr. J. N. McCormack, of Kentucky, under the auspices of the Association, addressed a large audience in the auditorium of the Handley Library, on the "gospel of health and long life."

The next meeting will be held at Woodstock, Va., in August.

The Association of Surgeons of the Southern Railway,

At its meeting in Charlotte, N. C., May 30th and 31st, selected Washington, D. C., for their seventeenth annual meeting, beginning June 12, 1912. Officers elected for this meeting are: President, Dr. J. H. Mitchell, Mt. Vernon, Ill.; vice-presidents, Drs. R. L. Gibbon, Charlotte, N. C., R. T. Ramsey, Elba, Va., F. A. Webb, Calvert, Ala., W. R. McKinley, Columbus,

Miss.; secretary-treasurer, Dr. J. U. Ray, Woodstock, Ala. (re-elected.)

The Southside (Va.) Medical Association,

Of which Dr. J. Bolling Jones, Petersburg, is president, and Dr. Emmett F. Reese, Courtland, secretary, will hold its next quarterly meeting in Petersburg, June 13th. The Petersburg Medical Faculty recently met and arranged for the reception and entertainment of the Association. It is needless to say the program will be interesting.

The Bedford County (Va.) Medical Society

Met in Bedford City, May 22d. The president, Dr. E. L. Marshall, being absent, the vice-president, Dr. J. A. Davis, presided. The secretary-treasurer, Dr. W. O. McCabe, was at the desk.

The principal paper, Infantile Diarrhœa, was read by Dr. M. P. Deboe, and was discussed by Drs. J. A. Rucker, M. P. Rucker and B. A. Rice. After the adjournment of the meeting, the druggists of the town, Messrs. Lyle and Roadcap, tendered the Society a refreshing entertainment.

The Medical Examining Board of Virginia

Will hold its summer session in Richmond, Va., June 20-23, 1911, for the examination of applicants to practice medicine in this State. The examinations will be held at the Medical College of Virginia, and applicants are expected to register early on the morning of the 20th. Dr. R. W. Martin, Lynchburg, is president, and Dr. R. S. Martin, Stuart, secretary-treasurer, of the Board.

Dr. Mark W. Peyser,

Editor of the Department of Analyses, Selections, etc., for the *Semi-Monthly*, who has recently been suffering from an attack of acute articular rheumatism, is much improved, and is at present enjoying a much needed rest.

Dr. Lewis Holladay,

Orange, Va., has been appointed to fill the vacancy on the Medical Examining Board of Virginia for the Eighth District, *vice* the appointment announced in our last issue, of Dr. A. S. Rixey, who was unable to serve.

Dr. A. L. Wilson,

Of Lynchburg, Va., went to New York the latter part of May to spend six weeks in study, after which he will go to London and Paris for a month's research in the hospitals of those cities.

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Original Communications.

RÖNTGEN IRRADIATION—ITS LOCAL AND GENERAL EFFECTS.*

By JAMES W. HUNTER, JR., M. A., M. D.,
Norfolk, Va.

My purpose this evening will be to discuss in as brief a manner as I may the local and general effect of Röntgen irradiation, rather than to try to give you a resume either of the great amount of medical work that has been incited or accomplished by the ray or tell you of its therapeutic indications. On the one hand, we have learned many things that it will not do, namely, the treatment of internal malignancy; and on the other, we are but beginning to discover what may be accomplished if the ray is used in its correct and legitimate way.

But, lest we lose sight of what has been accomplished, it will be well to review in some detail just what cases are suitable for Röntgen irradiation. Knowing these, we may deduce some law of what cases in the future one may reasonably expect to cure. The Röntgen ray may in all propriety be compared to salvarsan, that new and effective drug introduced by Ehrlich, but with this exception. Salvarsan is now heralded as a "therapeia magna sterilans," an attribute, whose falsity we shall soon learn, and, if I mistake not, it will be combined with the older mercurial treatment. When its rightful place is learned, then, like the Röntgen ray, it will blaze in the

"Zenith of its own proper firmament."

The Röntgen ray has been greatly extolled in the treatment of cancer. Under its beneficent influence epitheliomata will be reduced in size; rodent ulcers will heal; and more, many of these apparent cures will remain permanent. I have treated several; some have relapsed, to be again cured; others by prophylactic treat-

ment have remained healed for over the classical period of four years. In a few I have failed. Yet we have found that it is only those cases of carcinomata arising from tissues of the epiblast that have yielded. Once I undertook to treat a case upon the mucous membrane of the vulva—to my sorrow. Carcinomata of the breast and of the internal organs (the stomach especially) have not yielded to the Röntgen ray. There is a reason. In the case of the mucous membranes, there is too much secretion; in the deeper cases, too much healthy tissue must be penetrated. I have recently read that the Röntgen ray is being used upon organs exposed during a laparotomy, but I cannot expect any good to result therefrom. It is against my best judgment. Nevertheless, in the case of a man fore-doomed to a certain death, we will grasp at a last straw and rightly accord to him all the benefits of a doubt.

• With the gradual melting away of the epitheliomatal lump, one may look for general or systemic symptoms. I have again and again noticed a profound toxæmia—in fact, on one occasion I expected my patient to die. The reason is, of course, clear; simply the absorption of large amounts of toxic material. Occasionally the lump begins to discharge; in the rodent ulcer type the discharge is at times profuse. This is a welcome condition, though alarming to the patient, because in so doing he is spared the absorption of a mess of septic debris.

In the treatment of sarcomata, a very different course is pursued. The lump does not melt away, as it were, but gradually shrinks. Yet this very shrinkage is but the result of pressure. As the Röntgen ray acts only on the epithelial cell, the sarcoma cell must be dealt with in a different manner. The process is one of encapsulation. It resembles very closely that occurring in the healing of a tubercle. A wall of scar tissue is built up, and the sarcomatous tissue has no alternative than, being deprived of

*Read before the Medical Section of the Norfolk County Medical Society, May 15, 1911.

its nourishment, to undergo a necrosis. Clinically, the sarcomatous nodule will become freely movable. This, if ever, is the time to operate. Then, following a radical operation with a large quantity of post-operative irradiation, one has done his best in dealing with the growth, though in my own experience, as in that of others, the treatment of sarcomata is most discouraging. Most operators consider a simple incision of the capsule, to let out the necrotic sarcomatous tissue, followed by steady and prolonged irradiation, the only hope, though there is no objection to the employment of Coley's toxin also, if one so desires.

Another great group of cases to which the Röntgen ray has been successfully applied is that due to bacterial or fungoid action. Hence, the great number of cases of lupus, acne, eczema, psoriasis, sycosis and tenias that have been cured. I have treated many with most happy results. Let us watch their clinical course. In some diseases, as in acne, there is an abortive effect, but the great majority (particularly lupus), as a rule, immediately become worse. Hence we produce a moderately violent dermatitis. When this subsides, a cure often results. If not, another course of irradiation is pursued.

It had greatly puzzled röntgenologists why an untreated patch of lupus or psoriasis in the same patient should improve at the same time as the one treated by Röntgen irradiation. Why was it that tubercular glands of the neck improved so nicely? Why, the condition of things as stated above? At last we have the explanation. To Sir Almuth Wright and to Metchnikoff we must look for an answer. We have on the one hand an auto-vaccination; on the other, a phagocytosis. By exposing the lesion in question to the Röntgen ray we have killed many of the bacteria *in situ*, and have exerted the natural forces of nature. The killed bacteria are themselves taken into the blood stream as well as their liberated toxins. It is these stimulating the antidotes of the blood that have caused an absorption and cure of the lesion treated.

It has also been observed that recently enlarged glands when treated by Röntgen irradiation will be greatly reduced. In my own experience I have cured an exophthalmic goitre in a young lady. I have greatly reduced and have largely overcome the attending symptoms in a case of over twenty years standing in a

lady aged fifty. I have also irradiated seven cases of senile hypertrophy of the prostate with a relief of the symptoms in four, a marked improvement in one now under treatment, and a very slight improvement in two. In other words, I should say of seven cases, the youngest 58 and the oldest 80, I have cured four, have greatly benefited one (now under treatment), and have slightly improved two.

In what way and why does the irradiated gland so respond? Briefly, my ideas are these: That a parenchymatous enlargement is due entirely to either the proliferation or increase in size of the epithelial glandular cells, and it is the special affinity of this sort of tissue for the Röntgen ray that causes a reduction in their size and number; later there is a phagocytosis or absorption of the end products. But in the case where the enlargement is due to the proliferation of connective tissue, it is only by the still greater contraction of that tissue that relief can be afforded.

And, lastly, the Röntgen ray has been used as a stimulant in certain cases to cause a regeneration. Particularly would I refer to its employment in unresolved pneumonias. The results are more than encouraging. Again, it has been proposed to treat splenic myelogenous leucemia by the irradiation of the marrow of the long bones. Some results have been accomplished, it is true, but I, myself, feel that until we know more of the ætiology of this disease, we can hope to accomplish but little. In marked contrast, however, I may add that by means of Röntgen irradiation I have most materially helped to restore the pigment in a skin affected by leukoderma.

Such then is the action of the Röntgen ray. It acts upon the cell, the epithelial or protoplasmic cell, and not on that arising from connective tissue, though in destroying an epithelium of a less resistant type, its place has been taken, as in any other inflammatory process, by scar tissue. It acts upon those tissues arising from the epiblast, particularly the skin, for this reason. Mucous surfaces, being of a non-resistant nature in themselves to malignant invasion and also continually bathed in secretion, are not, therefore, suitable for irradiation.

It acts also, as we have seen, as a stimulant. It walls off the sarcomatous cell and in small growths thus offers a hope for cure. It acts as a stimulant upon bacterial and fungoid

organisms. It increases them to toxic activity, and by over-stimulation brings about a condition of auto-vaccination. Lastly, it stimulates the epithelial cells themselves; first, in the case of the degenerative or malignant cell, causing its disappearance, as in epitheliomata; and, secondly, in the normal epidermis. Let us briefly discuss this latter condition.

If the skin be exposed to the action of the Röntgen ray, there will in time develop a reddening or erythema. If the exposures be then still continued, a blistering will result; still further, an absolute destruction of the skin. Thus the three types of burns are nicely approximated. Nor is the Röntgen ray alone in this action; sunlight or the Finsen light will also cause it. It is the specific quality of the Röntgen ray as light rather than any intrinsic value that it possesses. I have, like any other röntgenologist, inflicted many burns; in fact, I have long held the impression that, in order to get the best results, the irradiation should be pursued in as great a degree as is possible with safety. Herein lies the nicety of judgment. But I must add that the co-operation of our patients must be obtained. I have been blamed for many burns, of which I am innocent. Thus a gentleman, in whom I was treating a lichen in a varicose limb, greatly exerted himself during a vacation, with a resulting varicose ulcer; a young lady applied some biniodide ointment to her neck; and a gentleman, whom I was treating for hypertrophied prostate, suffering from severe hemorrhoids induced by straining in urination, applied hot compresses to the irradiated parts. You will thus see that the röntgenologist's life is not an easy one.

There is a form of chronic dermatitis caused by prolonged Röntgen irradiation of a subtle and at first painless nature. Gradually there is a reddening of the hands, a scaling resembling ichthyosis, a horny nodule and oftener than one suspects an eating ulcer. The slightest touch will often cause the skin to bleed. And, worse than all, this condition refuses to improve. It continues and more and more ulceration develops with the necessitating of amputation of parts of the finger and large skin grafts. If this does not now improve, a local and later a general carcinomatosis results with the death of the victim. The list is appalling. Kassabian, Hall-Edwards, Bauer, Wagner, and many

others have died. Such has been the enthusiasm of our army of martyrs. Let us profit by their example and avoid their mistakes.

This form of radiodermatitis, resulting, as it does, by continued and subtle irradiation, has caused a marked revival of interest in the theory of Virchow. He claimed, as you will remember, that malignant growths were caused by prolonged irritation. It is the constant stimulation of the skin by the Röntgen-ray that has acted as an irritant and has in turn caused a deterioration, which brought far enough will result in a malignant invasion. A case where an agent capable of producing a cure in a class of disease, has in turn caused that disease—a case of *similia similibus*, as our Homeopathic brethren contend! This is true, but on the other hand it is a very different *status quo* from that which Hahnemann taught.

The Röntgen-ray owes many of its qualities to the fact that it belongs in the class of light. It follows the general law of light in that it varies inversely according to the square of the distance. The milliamperemeter also tends to show that, the rest of the factors remaining equal, the other law is also followed; its effect varies directly with the quantity. But, though it can be passed through a fluorescent screen, it can neither be reflected nor refracted. Yet the most important attribute of the Röntgen-ray lies in its penetrative quality. All light, it is true, has this in more or less degree—witness the holding of the hand between the eyes and the sun. Nevertheless, it is to its extreme penetrability of those organic substances devoid of the mineral salts that it owes the greater sphere of its influence. It is this very factor that has given the Röntgen-ray its great superiority over the Finsen-light in the treatment of lupus and its kindred diseases.

If the spectrum be studied, it will be found that those rays lying below the red are heat rays, while those beyond the violet have a certain actinic quality. It is this in sun-light that causes freckling and burn; the same thing is true of the Finsen-light and the Röntgen-ray. They lie in the violet or ultra violet end of the spectrum. Now, since the Röntgen-ray is invisible to the eye and does affect the photographic plate, it must be concluded that it lies somewhere beyond the violet. Just where we do not know. But as the waves of ordinary

light become shorter as we approach the violet, and as the Röntgen-ray can neither be reflected nor refracted, we have reason to believe that its wave length is an exceedingly short one or probably only a series of impulses in straight lines, more especially as it forces its way between the atoms composing an organic mass.

Another factor that must not be overlooked lies in the fact that light is a chemical force of a tremendous quality. In the action of light upon certain substances (nitrate of silver in solution, for example) a darkening occurs. In the exposure of the photographic plate there is a disruption. The bromide or iodide of silver is broken into its component parts with the deposition of metallic silver upon the plate. As the Röntgen-ray causes this reaction, is it not also capable of breaking down the highly complex embryonic cell composing neoplasms? Taking this factor into consideration, and likewise its penetrating qualities, we may understand the remarkable effects produced in the bismuth injection of chronic sinuses. Beck claims that while good results have been obtained by the injection of his subnitrate of bismuth-vaseline mixture, better results have been obtained when the Röntgen-ray is at the same time employed. He thinks that the fluids of the tissues have caused a liberation of the nitric acid radical, and when the Röntgen-ray is added the results should be quicker and more marked.

Thus it will be seen that the Röntgen-ray owes its great qualities to the fact that it is a penetrative light lying beyond the violet. Its discovery is justly considered one of the greatest in modern medicine. Its employment has been a boon to the human race. Its misuse is followed by fatal consequences. To Freund, of Vienna, is due perhaps more than to any other its introduction into medicine. Röntgen seems only to have thought of its diagnostic qualities. Radio-therapy has passed beyond the period of experimentation. It is based upon clear and rational principles. Its enemies can no longer deem its employment as empirical. Some things, as we have seen, it can not do. But used in its correct and legitimate way it is almost all-powerful. In its own proper sphere the Röntgen-ray is the greatest therapeutic agent that we now possess.

THE ILEO-CECAL FOLD AND CHRONIC APPENDICITIS.*

By J. SHELTON HORSLEY, M. D., Richmond, Va.
Professor of the Principles of Surgery and Clinical Surgery in the Medical College of Virginia; Surgeon to Memorial Hospital.

During the past year my associate, Dr. C. C. Coleman, and I have been carefully examining the last few inches of the ileum and the ileocecal valve in every case of chronic appendicitis and in every abdominal operation where the condition of the patient justified such an examination. In common with many other surgeons we had previously been content to remove the appendix through a small incision and to deliver no more of the bowel than possible. Often the appendix was the only structure that was delivered into the wound. This, of course, makes a satisfactory operative recovery, but in a considerable proportion of cases of chronic appendicitis there has been a long persistence of the identical symptoms that the patient complained of before removal of the appendix. In some instances these symptoms have been so definite and persistent as to render the common explanation of "trouble from adhesions" untenable. After going over our cases carefully and eliminating such causes of error as stone in the kidney and ureter, rheumatism, spinal trouble, ulcer of the duodenum or stomach, etc.; we have found a small number of cases whose pain was so well localized and so definite that the only conclusion was that the pathological condition was not relieved by removal of the appendix. Dr. E. MacD. Stanton sums up my own experience so well in an article appearing in the *Annals of Surgery* for June, 1911, that I will quote him.

"That the end results in cases operated upon for supposed chronic appendicitis have not thus far been altogether satisfactory, is attested by the fact that in almost every community there are more or less numerous patients who have had their appendices removed, with no improvement in their symptoms. This is partly accounted for by the fact that chronic appendicitis has been the especially selected playground of the amateur surgeon, but there is abundant evidence that a large proportion of the uncured patients have left the operating tables of surgeons whose standing is unquestionable."

Since Mr. Lane, of London, has called attention to the peculiar pathology in the terminal

*Read at a meeting of the North Carolina Medical Society June 20, 1911.

ileum, which has been designated Lane's kink or band, a great deal of interest has been created in the causes and the pathological and clinical significance of this condition. It is not necessary to repeat here what has recently appeared on this subject, but the work of such surgeons as Mr. Lane, Dr. Chas. Mayo, Dr. Franklin Martin and various others has abundantly testified to the rather constant presence of this condition in about 10 per cent. of cases of chronic appendicitis. That such a band producing a kink in the terminal ileum and interference with its peristalsis and the emptying of its contents into the cecum would cause symptoms can very readily be understood when we consider that a slight adhesion about the pyloric end of the stomach is responsible for very definite symptoms. However, there are many cases of chronic appendicitis in which the typical Lane kink and other pathological conditions can be definitely excluded and still, after removal of the appendix, precisely the same symptoms are complained of as before operation. In this small, but annoying, group of cases we believe that the ileo-cecal fold is probably responsible for some of the trouble. This fold is attached to the terminal portion of the ileum opposite its mesenteric attachment and to the ileo-cecal junction and passing down joins the mesentery of the appendix and sometimes the appendix itself. It can readily be seen that a chronic inflammation of the appendix may produce a shortening of this fold in such a manner as intestinal stasis may produce a shortening of the band that causes Lane's kink. If this fold is not removed when the appendix is removed the whole condition is not corrected. On the other hand, there are many cases of chronic appendicitis in which the trouble is confined solely to the mucosa of the appendix and there may be no shortening of the ileo-cecal fold. However, when the mesentery of the appendix is ligated, the ligature pulls down on the ileo-cecal fold and so exerts marked traction on the terminal ileum. If the ligature on the mesentery of the appendix is tied to the ligature on the stump of the appendix, this traction will be still further increased. In other words, in cases in which the ileo-cecal fold does not produce an abnormal pull upon the terminal ileum, the constriction of the ligature on the mesentery of the appendix with which this fold blends, pulls

down on the ileum and either makes a kink in the ileum by pulling on the fibers of the free border of this fold or increases the obliquity of the insertion of the ileum into the cecum. This condition, we believe, gives rise to many of the post-operative symptoms in cases of appendicitis that have not been relieved by removal of the appendix.

In conclusion, we will recommend that in every case of chronic appendicitis the ileo-cecal fold be removed. If it has previously been shortened from intestinal stasis and inflammation of the appendix, it will give symptoms whether the appendix is removed or not. If the appendix is removed, the ileo-cecal band, which normally may not exert undue traction on the ileum, is likely to be so constricted by the ligature on the mesentery of the appendix that it will produce undue pulling on the ileum and consequent kinking or partial obstruction where none existed before. Of course, there is no occasion to remove a normal ileo-cecal fold unless the appendix has to be removed also.

It has recently been our practice in every case of chronic appendicitis to remove this fold when it is at all well developed, by cutting it close to its insertion into the ileum and tying the vessels with fine cat-gut. Sometimes it is necessary to approximate the peritoneum with a fine suture. While these cases have been too recent for a satisfactory report we have been impressed by the fact that we have had much less complaint of post-operative symptoms since adopting this procedure.

IS PELLAGRA A DISEASE PRIMARILY OF THE ALIMENTARY TRACT?*

By J. C. JOHNSON, M. D., Atlanta, Ga.

Perhaps no disease has more engaged the attention of the medical profession during the last few years than pellagra. This is certainly true in the South. The reason for this is its more common occurrence and its fatality.

In one state in 1909, account is given of 188 cases with 91 deaths. In another it is estimated that the state loses yearly 500 to 1,000 people—a mortality slightly more than from typhoid fever.

I have found it impossible to secure complete statistics, as many states have no law re-

*Read before the American Gastro-Enterological Association, Philadelphia, April 20, 1911.

quiring reports of the disease. I have reason to believe, however, that the number of cases in the south has been exaggerated.

Pellagra is not confined to section or locality, and doubtless presents different features un-

der different circumstances, but as I desire to base my study upon personal observation and experience, I will be obliged to omit a review of the subject and directly invite your attention to the matter in hand.

Age	Sex	Occupation	Previous History	Duration	First Symptom	Nausea	Vomiting	Pain in Stomach	Diarrhoea	Loss in Weight	Dizziness	Cough	Profuse Saliva	Ocular Symptoms	Heart	Lungs	Liver	Kidneys	Stomach	Test Meal	Fecal Examination	Eruption
1 64	Male	Farmer	Neg.	2 mos.	Dizziness	+	+	+	+	+	+	+	+	+					Situ	HCl - R -		Mouth and hands
2 52	Female	Housewife	Neg.	4 mos.	Diarrhoea	+	+	+	+	+	+	+	+	+					Atony	HCl R +		Palms of hands
3 39	Male	Merchant	Indig'n	?	Indigestion	+	+	+	+	+	+	+	+	+					Situ	HCl R -		Face and hands
4 40	Male	Farmer	Neg.	2 yrs.	Pain	+	+	+	+	+	+	+	+	+					Situ	HCl - R -		Face, hands, mouth
5 36	Male	Lawyer	Indig'n	2 mos.	Pain	+	+	+	+	+	+	+	+	+					Situ	HCl - R +		Hands and mouth
6 35	Female	Housewife	Indig'n	1 yr.	Pain	+	+	+	+	+	+	+	+	+					Situ	G + F36 T 66		Hands
7 65	Male	Minister	Neg.	6 wks.	Pain	+	+	+	+	+	+	+	+	+					Situ	G + F38 T 74		Hands, arms, legs
8 48	Female	Housewife	?	2 yrs.	Choking	+	+	+	+	+	+	+	+	+					Ptoxis	HCl - R -		Face and hands
9 32	Female	Housewife	Indig'n	1 yr.	Pain	+	+	+	+	+	+	+	+	+					Situ	HCl - R +		Hands, arms
10 34	Female	Teacher	Neg.	1 mo.	Drawing	+	+	+	+	+	+	+	+	+					Atony	G - F32 T 50		Hands
11 36	Male	Merchant	Rheum	2 mos.	Nervous	+	+	+	+	+	+	+	+	+					Situ	HCl R +		Hands, arms, face, mouth and body
12 37	Female	Housewife	Indig'n	2 mos.	Diarrhoea	+	+	+	+	+	+	+	+	+					Situ	HCl - R -		Hands, wrist, mouth
13 51	Male	Salesman	Diarrh.	1 yr.	Eruption	+	+	+	+	+	+	+	+	+					Ptoxis	HCl - R -		Hands, arm mouth
14 34	Female	Housewife	Diarrh.	4 yrs.	Diarrhoea	+	+	+	+	+	+	+	+	+					Situ	G + F30 T 38		Hands, wrists
15 37	Female	Housewife	Indig'n	2 yrs.	Eruption	+	+	+	+	+	+	+	+	+					Ptoxis	G + F24 T 42		Hands, mouth
16 32	Female	None	Indig'n	3 mos.	Eruption	+	+	+	+	+	+	+	+	+					Atony	G - F18 T 38		Hands, mouth
17 26	Female	Housewife	?	6 mos.	Sore Mouth	+	+	+	+	+	+	+	+	+					Atony	HCl - R +		Hands, mouth
18 28	Female	Housewife	T. B.	?	?	+	+	+	+	+	+	+	+	+					Atony	HCl - R		Hands, mouth
19 47	Male	Merchant	Neg.	8 mos.	Indigestion	+	+	+	+	+	+	+	+	+					Situ	HCl - R -		Hands, arms, mouth
20 52	Female	Housewife	Indig'n	1 yr.	Diarrhoea	+	+	+	+	+	+	+	+	+					Ptoxis	HCl R		Hands

It is thus seen that pellagra is not found in the poorer classes alone, and that neither age, sex nor occupation predispose to it. It is not contagious, and its infectious nature has not been demonstrated. A summary of the symptoms shows the following order of predominance:

- 1st. Eruption.
- 2nd. Pain.
- 3rd. Loss in weight.
- 4th. Nausea and diarrhoea.
- 5th. Dizziness.
- 6th. Cough.
- 7th. Vomiting and profuse salivation.
- 8th. Ocular symptoms.
- 9th. Miscellaneous—referred to the nervous system.

Unfortunately, we cannot measure fully the importance of this classification because of the varying intensity of the symptoms, lack of knowledge as to actual time of appearance, duration and sequence. It is worthy of note just here, however, and especially to be considered later, that certain of the symptoms are

always associated and appear to have significant relation to the stage of development and course of the disease.

The symptom upon which the diagnosis is usually based is the eruption. This, in nearly all cases, appears on the dorsal surface of the hands and forearm, beginning at the base of the first phalanx and extending half way to the elbow, or entirely so. I have seen a few cases in which the eruption was confined to the palmar surface of the hand in the form of blackened fissures. On the leg it begins at the ankle and extends half way to the knee. The eruption is symmetrical, with well-defined borders varying from simple redness to blebs and erosions, leaving, when it disappears, a smooth, velvety skin. When there is no distinct eruption, there is often a deposit of brownish-looking pigment. This, as well as the typical dermatitis, sometimes develops in the face, chiefly on the forehead and cheeks. In some cases there is found on the tongue, gums and pharynx a membranous deposit with inflamed base not unlike that found in measles and diphtheria. Accompanying the eruption there is often in-

tense itching, or burning, which may occur in any part of the body. During the winter, the eruption grows markedly less, but never entirely disappears. The following spring, it assumes its usual characteristics, being more or less severe.

Rivalling the eruption in frequency and considered no less important, as pathognomonic, are the various phenomena ascribed to the nervous system. Among these dizziness stands first. In many there is weakness, despondency, loss of memory, numbness of extremities, aching in different parts of the body, especially about the neck and shoulders, and usually only in one shoulder, in the same individual. One particularly complained of constant aching above the sternum. The movements are sluggish and uncertain. The expression of the face is so characteristic that I would term it *facies doloris*, the attitude that of one who looks upon the abomination of desolation. In some insanity supervenes. Except in one case, reflexes were normal. In that one the patellar was exaggerated.

Our summary shows that twelve of the patients suffered much from dizziness. In none was there actual vertigo. The visual disturbance consisted of heaviness, or aching about the eyes, difficulty in reading or writing, *muscae volitantes*.

Cough deserves attention only in that, except in case 18, which had T. B.; there was an absence of all objective symptoms. Several of those who had no cough had profuse discharge of ropy saliva, notwithstanding there was a noticeable absence of mucus in the stomach. With two exceptions—4 and 6—those who had choking had neither cough nor ropy saliva.

In case 11 there was albuminuria due to other causes than pellagra.

Except in one patient, who had marked indicanuria, there was nothing discovered in the urine nor in the action of the kidneys which could be called pathognomonic or pathological.

Analysis of the blood has thrown no light upon the nature of the disease. I regret that I cannot submit a more complete report of investigation along this line. It has been said that fractures heal slowly in pellagrins. I failed to find a lack of fibrin elements. Case 4, a few nights after admission, jumped from a second-story window to a brick pavement below, sustaining a compound fracture of one leg and

concussion of the spine. Recovery was prompt and without incident.

The circulation is usually feeble, yet blood-pressure readings have been practically negative. There is, however, in the latter stages of the disease a tendency to myasthenia cordia. In fact, the immediate cause of death in the fatal cases here recorded has apparently been asthenia cordia, death being rather sudden.

Fifteen of the patients had nausea, 7 vomiting, 17 pain, 15 diarrhoea, 4 had marked gastroparesis, 6 atony. In fourteen there was an absence of HCl; in two it was reduced. In seven there was no rennin; seven had sore mouth.

The pain here alluded to was referred to the stomach, of a colicky, cramping nature, occurring at indefinite times. The nausea and vomiting was, as a rule, following meals.

The duration of the disease is as uncertain as its history, and is not determined by nor does it determine the presence or absence, time of appearance or association of any symptoms. Usually a definite history is hard to obtain. Many do not consult a physician until alarmed by the appearance of the eruption, or else, the eruption being late to appear, are treated for other supposed disorders. Case 14 died four years after recognition of first symptom—diarrhoea. Case 11 lived only two months.

Now let us adjudge, if possible, the relative competency of these various symptoms as pathognomonic of the disease.

The eruption is so distinct from other forms of dermatitis that its morbid process cannot be mistaken, and, that it is a clue to the complex nature of the disease, seems certain. Its seasonal recurrence suggests a kinship to poisoning by such vegetable substances as ivy, etc., but this relation is too strained to be of value in our study. The appearance of the eruption in the mouth and throat also suggests a kinship to diphtheria, measles and scarlet fever. Yet, if it were maintained that pellagra is a disease of special toxemia, it remains to be explained why in one there is fever, albuminuria, a definite history and short duration, whereas in the other the contrary is true, especially the absence of fever. As we have seen, in only one case of pellagra was there fever, and in only one albumen in the urine, both of which were due to other and independent conditions.

The eruption is aggravated by rays of the sun. I know of no effect from artificial heat.

The eruption does not seem to bear either causative or sequential relation to the state of the nervous system. Insanity has developed after the eruption has disappeared, and in some cases the nervous symptoms are pronounced before any evidence of eruption. In fact, neither the form nor the degree of nervous disorder is determined by the presence or absence of any other symptoms. Two of the fatal cases showed no signs of insanity, whereas case 11, of shortest duration, the most vigorous of all the patients, was so violent that he had to be put in a straight jacket. He died two months after appearance of first symptom, and three days after admission to the sanatorium.

Another fatal case, not included in the tabulation, was perfectly rational until death. Case 7 presented a most typical eruption, but was always cheerful. In each case where insanity has developed the patient has died.

The sensory and motor symptoms, such as weakness, numbness, aching, can be explained by the state of nutrition incident to digestive disorders. Of the patients who complained of dizziness, four had ocular symptoms. Of these four, two had some form of astigmatism. Eight of those with dizziness had no HCl. The two who had HCl with dizziness were those with astigmatism. In none of those who had dizziness with or without the use of glasses was the eruption so typical as in case 7, who, though an old man, had no dizziness and wore glasses only for incidental reasons.

Only one of the fatal cases complained of dizziness, and this one had no HCl.

Disturbance of vision is a common accompaniment of gastrointestinal diseases. The oldest and one of the most severe cases complained of no trouble with his eyes nor any definite form of nervous trouble except dizziness, yet eruption was typical on the hands and very severe in the mouth. He had pain, vomiting, profuse diarrhœa, marked prostration, frothy saliva. There was a total absence of gastric juice.

One of the youngest, who had very slight eruption on hands and forehead, was troubled much with dizziness and ocular symptoms without astigmatism. Diarrhœa was persistent. He had no gastric juice. In only one patient, who did not wear glasses, was there visual disturbance in the presence of HCl, and she was a teacher. Of course, only a routine examina-

tion of the eye by a specialist could eliminate all doubt as to the significance of this feature of the disease.

Having thus sifted and weighed other evidence, let us examine more closely the alimentary symptoms and conditions. Only six of the twenty had free acid. In this six, with one exception, the eruption was slight. In the exception the eruption was severe, and he also had the highest acidity and the least nervous disturbance. In fourteen cases lacking HCl, diarrhœa was present. In the eight cases with absence of HCl, but presence of rennin, the diarrhœa was less frequent, less severe and less persistent. In no patient with HCl was there diarrhœa, except one due to transient cause.

The membranous deposit in the mouth, with one exception, was present only in those lacking HCl.

In the patients with atony and ptosis, three had HCl; two had rennin without HCl.

Case 4, one of longest duration, had the most severe eruption on the hands and face and in the mouth; had rennin but no HCl. Of the four who died only one had rennin. No patient who had HCl has died nor become insane.

The question may now be asked, Is pellagra a disease primarily of the alimentary tract?

The first recognizable symptom in fourteen was directly referred to the alimentary tract. In only three was sore hands the first symptom, and in each of these was there a previous history of indigestion in some form.

Case 3 was treated for diarrhœa two years before appearance of eruption. There was no HCl on first examination.

Case 4 had suffered for two years with dull pain in stomach. Case 8 was treated for gastroptosis, pain, choking and other symptoms two years before appearance of eruption, during which time there was absence of HCl. This case is notable from the fact that it proved fatal.

Case 9 is also remarkable in that when first seen in 1907 the eruption on hands was severe. HCl was then present. Prior to this she had much pain in stomach. Following treatment, rash disappeared and other symptoms were hardly noticeable. She gained forty pounds, and later gave birth to a healthy child. Last summer the eruption returned. HCl was absent. Without question the absence of HCl is an important feature of the disease—not

essential to its development, not determining its course, but significant of its gravity and prognostic of its results.

In each fatal case vomiting and diarrhœa played the most important role in the last act of the tragedy, for tragedy it may be fitly called. It is obvious also that the eruption has nothing to do with the appearance of gastric symptoms, nor in the production of insanity. In fact, in each of the fatal cases except one the eruption had disappeared. It is easily apparent too that the involvement of the nervous system is not causative of the disorder of the digestive organs. The pathogenesis of the disease must yet remain in some doubt. We cannot enter fully into a discussion of this here.

It is certain, however, that season has to do with its occurrence and recurrence, and changes in diet, clothing, habits, etc., incident to season are worthy of consideration in a further study. Climatic conditions may have much or little influence upon it. Eleven of the twenty cases were from the Northern portion of our State, which is mountainous. Of the remainder, some were from Southern Georgia, and others from various parts of South Carolina and Alabama. Five of the eleven from Northern Georgia were residents of Atlanta. Only two were exurbans.

There are no sandflies in Atlanta, and some of the patients had eaten sparingly (or not at all) of corn products. But in some who had used it freely there was a distinct craving for it when it was withdrawn, and symptoms appeared to be aggravated by its resumption.

No micro-organisms of pathological importance were found. So we turn again to the alimentary tract for direction.

The disease is distinctly one of perverted metabolism, having its first expression in the epithelial structures of the alimentary tract. Time does not permit a proof or demonstration of this fact, nor even allow us to follow the *modus operandi* of its production. The authority for the statement rests upon the competent evidence which the cases themselves have presented. Other than this would be presumptive.

The treatment of pellagra is not a part or purpose of this paper, and would hardly be permissible did not results add some degree of confirmation to the theory of its pathology. With this license, the following report of cases is given. In each of these the prognosis appeared most grave:

Case 1.—Sixteen stools daily, eruption typical on hands and in mouth. All symptoms accounted in table present. Four days after beginning treatment one or two stools daily, other symptoms subsiding *pari passu*. Four weeks later had gained twenty pounds.

Case 4.—Eruption most severe on hands, face and in mouth; face and hands œdematous; tongue could not protrude because of swelling. End of third week patient's appearance practically normal, condition good.

Case 18.—Tuberculosis complicating, eruption typical on hands and in mouth. Temperature 102, much prostration, pain in stomach, nausea, vomiting, diarrhœa all present. Three weeks later no eruption, temperature normal, T. B. absent, other symptoms having also disappeared. One month later had gained several pounds in weight.

Similar results have been realized in other cases of equal gravity not here recorded. In all there is evidence of improvement within 48 to 64 hours. Since beginning this plan of treatment not one has died.

A prescription is given containing potassium chlorate, tincture chloride of iron with essence of pepsin; also a pill of calcium sulphide.

The frequency of the dose is governed by the indications of each case.

The diet is milk and eggs.

ADDENDUM.

For lack of time allowed this paper on the program details of treatment were omitted. I, therefore, desire to supplement what is said above, hoping that those interested in the subject, as we all must be, will see fit to demonstrate by trial the truth or fallacy of the apparent facts.

The summing up of the evidence is correct and the evidence itself is indisputable. Further observation and experience only strengthen it.

At some later date the writer hopes to elaborate the physiological features of the study and offer some explanation of the manner in which the cause operates in producing the unusual conditions and train of symptoms characteristic of the disease. Of course, the stage in which the disease presents itself, the chemical condition of the alimentary tract, the presence of complications, etc., determine the details of treatment.

For example, if the motility of the stomach is diminished, with or without ptosis, special attention must be given to relieving as rapidly

as possible the myasthenia by diet, electricity, and general conduct.

The patient may not be confined to bed. In such a case with ptosis a suitable support is supplied, and fluids restricted.

If, at the same time, or in the absence of the above conditions, there is hyperchlorhydria, alkalies, such as sodium bicarbonate and magnesium usta, are given.

When diarrhœa is severe for the first day or two, bismuth, calcium carbonate, tannigen may be needed, but not often.

In ambulatory cases not severe an ordinary light diet is allowed. In all cases at the very beginning the drugs named above are administered, and continuously used until symptoms have disappeared. Nothing is needed for the eruption.

The exact prescriptions used are as follows:

R. Potassii chlorat. 3iiss.

Tr. ferri chlor. 3ss.

Ess. pepsi (F.), q. s. 3vj.

M. Sig.—3ij in wine glass of water through quill after meals.

R. Pil. calc. sulphid. gr. ss.
no. l.

Sig.—One three times daily.

In severe cases these doses may be given a little oftener.

Even in the severe cases, olive oil, given in small doses, alone or combined with raw egg, will control the cramp or pain. This failing, paregoric may be given.

It is very necessary to keep the patient under constant and continued observation, to adhere strictly to details in the treatment until relief comes. Otherwise, satisfactory results will not follow.

Since the above article was presented several of those reported have been seen, and there is no recurrence of the trouble.

55 East Harris Street.

THE DOCTOR'S DUTY TO HIMSELF IN THE FACE OF ADEQUATE PUBLIC PROPHYLAXIS.*

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The Real Tree of Life. The seed of preventive medicine planted by the profession of

ancient days, when Hippocrates, Galen and Celsus taught the healing art, cultivated carefully by the long line of faithful medical men since that time, has now grown into a tree of magnificent proportions, burst into blossom, and bids fair soon to yield a harvest commensurate with the time and care bestowed upon it. The doctor who stands beneath the shade of this tree of knowledge and of life, and whose peculiar duty it has been to preserve and tend it, would do well to note the effect upon himself which an overflowing garner of its fruitage will bring.

Penalties and Question Marks. When the people whose preventable ills he has treated refuse henceforth to be sick, what shall he do?

When his time-worn precepts, acted upon at last universally, result in the neglect on the part of his patrons to ingest the fecal fly-borne "bug" and typhoid fever is no more, where will his income be? When infantile diarrhœa, grippe, measles and whooping-cough have taken the place in the minds of the public now occupied by smallpox, diphtheria and scarlet-fever, whose deadly operations shall have ceased forever, and fear and fumigation have armed at all points his present unguarded, but awakening clientele, what will then be the fate of him to whom this effect is due?

The Doctor's Bread and Meat. The doctor of the past and present has lived, and now lives, only through service to the sick, no one ever pays to be kept well. The sickness that did not come, like the water that is past the mill, never grinds any grist for the doctor. Fifty per cent. of this income-producing blight of preventable sickness, which he has fought and is fighting, is destined to be conquered soon; who will care for that poor philanthropic medico who finds his occupation growing smaller by degrees and beautifully less?

A Rift in the Cloud. The surgeon's and the specialist's problem is not so acute; he is comparatively safe, except from overcrowding; for until the application of the science of eugenics shall have weeded out the unfit from the parents of the future, and until the coccus of Neisser shall have ceased to disport himself in columnar and ciliary epithelium, the general surgeon, the G. U. man, the oculist and the aurist will find no diminution in the need for their ministrations. Neither will the stomach specialist and the neurologist in

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America be entirely in the cold, for years to come at least. The obstetrician also will without doubt have still a function to perform; for even without the admonitions of "Bwana Tumbo the Strenuous," race suicide is not likely within the present century to make much adverse impression on the school population.

The Crux of the Situation. But the medical profession is composed mostly of general practitioners, and as such must face and plan for the future, if (and I speak feelingly) one dollar of yesterday buys fifty cents worth of food and clothing, instruments, books, etc., to-day, how shall the poor physician manage on the dollars of to-morrow, when his income shall have shrunk to half or a quarter of its present size?

Doctors are idealists by education and training, if not by nature, but are likewise food consumers, with more or less expensive tastes in other directions. Would it not be well now to provide for the coming situation, when the doctor's vision for the health of the people has in larger degree come true?

The Doctor's Unchangeable Altruism. No medical man would counsel a change from the traditional attitude with regard to disease. Doctors are sworn enemies to all physical ills which afflict mankind. These ills may disappear; their antagonism never.

They have fought the disease in the individual and *en masse* since the dawn of history, but it is only in recent years that the war waged upon the wide-spread causes which have produced disease, has given promise of a successful termination. The hidden germ sources of the enemy's strength have at last been revealed, and the equipment for their destruction through the deep research of devoted doctors is being daily perfected. Will men enlisted in such a cause take any backward step? The very suggestion is an insult.

The Doctor's Paradox. In all wars of conquest the invader must subsist upon the country over which he waves his sword in victory, and barrenness and destruction mark the fields over which his forces spread. The victor becomes fat and prosperous as the conquered are weakened and despoiled. The doctor's invasion in the domain of preventable disease, with its notable victories, reverses this order of things. With every advance and in proportion as his

conquest is most complete, the doctor in his capacity of sanitarian finds the people along his route more and more happy, healthy, wealthy and contented, while he, a diminishing factor, in the midst of plenty, finds the world less and less habitable for himself. What "Balm" for him in this "Gilead?" "The physician there" is like to be in trouble, unless he find it.

The Approaching Test. The questions I have asked, and the inevitableness of the progress in applied altruism to which the doctor is pledged, has little bearing yet, since there is still sickness enough to go around. The problem, however, is near enough to become pertinent well within the range of the lives of many doctors of to-day, particularly the city dwellers among them, and the days that lie between that day and this, will test their altruism to the core. Whether this coming day will find the general practitioner of medicine pleasantly adjusted to the changed and changing conditions consequent upon the increasing barrenness of his field of labor, rests solely with the doctors of the present. Coming events have unmistakably cast their shadows before. Again I ask what shall be done? My answer is *get together*.

The "Open Sesame" of To-day. Combination is the key note, the key word and the key act of the day in every line of human endeavor and the doctors must perforce profit by example. Benjamin Franklin, as he was signing the Declaration of Independence, said, "Now, gentlemen, we must all hang together, or assuredly we will all hang separately." This observation is not without its significance in the present discussion. The Doctors' Trust, as every informed person well knows, is now nothing but a figment of the imagination, and born of the guilty fears of the quack and nostrum maker; but let me say that it, or something very like it, must become a living reality if in the not far distant future the doctors are to meet satisfactorily the conditions in their profession produced by the advance of sanitary science.

The Bonds Which Should Unite. The internal reasons why doctors should fraternize are numerous and unanswerable; a common profession, a common altruism put them upon a plane on which no other calling moves, and now

externally they have a common danger threatening the very existence of the old time medical man.

The Demon That May Divide. Notwithstanding common interests and needs, physicians are from the very nature of their separated activities, crossing and recrossing as they necessarily do the lines of effort of other men engaged in the same purposeful avocation, bound to see and hear many things which tend to foster that smallest of attributes of the human mind, Jealousy. Hearing only one side and doubtless realizing oftentimes their own shortcomings, but admitting them never, there is a very real danger that their minds may become warped and instead of apprehending the high qualities of a rival, yield mentally to pique, which renders free intercourse and fraternity impossible.

The Open Forum. There is nothing which will do away with this unworthiness like a common meeting place to act as a clearing house for the good things which may be gathered, and the bad things which ought to be dissipated.

The lawyers' differences serve but to bind them closer and their united front enables them to seize the plums of life, because they have an open forum in which to thresh out their quarrels. The doctors' differences but divide them, because the opportunity of open debate over, common interest is lacking. Should this state of things not be corrected?

Medical societies discuss medical subjects solely. There are other things of equal, if not greater, importance to the doctor. I call your attention to the political aspect of the medical profession, the neglect of which will in the near future work an irreparable injury to a noble calling.

Vantage Ground. The places of prominence and applause have hitherto gone almost solely to the soldier and the lawyer. Without disparagement it may with propriety be said that the scientist and the sanitarian deserve more of their country than either, for the life-saving character of their endeavor. In this day they are beginning to receive a larger meed of appreciation than has ever been accorded them, but the solid advantages of this new tactical position will be lost if the united, organized, politically potential backing of the whole medical fraternity is lacking to give standing to its

claims and to command respect for its opinions. In the coming time, a readjustment must take place in the relations of the doctor to his community; the individual will come in for less and less of the medical man's attention; the public health receive more and more of his time. This readjustment should be accomplished by doctors, united and strong in power and purpose to sustain and carry forward without loss of dignity or standing, the humane objects for which they have ever stood.

I have said elsewhere, and now reiterate that "the doctor's peculiar qualifications render him especially fit for leadership along all lines which make for the uplift of the race."[†] He must make it his business to in some measure bring these qualifications to the fore. The doctor must see something else besides his simple duty to a sick man, and he must discuss these other phases of his life in open meeting, with his fellows, and be not too busy to act as well as talk.

The Doctor Citizen. He must throw himself into the political, educational and business life of his town or community, stand for its offices and speak for its enterprises. The people need him in these things, but I am now emphasizing the absolute self-preserving need he has to do this in order to keep up with a procession which tends to hurry past him, when his peculiar abilities qualify him to command every company and regiment in the line of march.

A Censorship of Ability. The Medical Society should place itself in the situation to determine who should be pushed forward in positions of trust and responsibility. If a health officer is to be elected, he should have the imprimatur of the Medical Society. If a school trusteeship is vacant, the Society should cast around and see if there is not a doctor available who would best suit the job. If a councilman is needed, there should be a physician willing to run and he should be one in whom his brothers place confidence. What is needed in municipal life is educated men of high ideals. What class can furnish a larger proportion of such than the medical profession?

A Leaf From the Book of Experience. The experience of the medical profession before the Legislature in the matter of the *license tax* should remove all doubts as to the necessity for close and earnest attention to the business

[†]Address before the Medical Society of Virginia, at Roanoke, October, 1909.

and political as well as purely medical side of life. Organized business, organized labor, organized educational institutions, organized legal, moral, municipal, social and religious enterprise, all have their inning, and the "doctor's bill," as is customary, is the last to receive attention.

A Nettle Grasped.—These are facts, and however distasteful it is to the doctor to thrust himself forward, contrary as it is to every traditional instinct of his calling to sound his own trumpet, the conditions surrounding him admit of no alternative in my judgment other than the use in proper fashion of the means and weapons by which he is like to be thrust aside. The potential force is within him. No apology is necessary for the qualifications offered; it remains but for physicians as a whole to place themselves, with dignity and determination, in a position to secure that respect and consideration which their present attitude has apparently forfeited.

A Practical Suggestion.—Once the need for action is clearly seen, the details of organization which will accomplish the results desired can easily be left to the intelligence of the men comprising the local societies. I suggest as a step towards showing the need for action, that the order of business of every local society provide for a discussion of some issue, local or general, apart from purely medical themes. That the combined opinion and the matured judgment of medical men may be brought to bear on the problems confronting them as citizens and patriots. The whole structure of industrial and business life is undergoing change and no program made to-day will be likely to fit conditions on the morrow, the only settled fact is that change is inevitable, and the part of wisdom is to be on the ground and prepared to take full part in moulding events so that the wisdom, the education and the patriotism, as well as the higher heart qualities of a noble profession be not lost or smothered underneath a system which measures everything by the dollar mark.

CONCLUSION.

To many the need for modifying the traditional attitude of the profession is so remote as to render the discussion of such a change to the highest degree academic, but to others whose situation has enabled them to keep in touch with the remarkable enlightenment of

the public, and the resultant initiative engendered, in reference to sanitary matters, the time when preventable disease will be controlled looms up surprisingly near.

It behooves the medical profession, therefore, to take its head out of the sand of conservatism and try to see what may be done to guide the march of sanitary progress along lines which will conserve and preserve the profession which inaugurated it. Self-preservation is said to be the first law of nature. The doctor in the spirit of "The Great Physician" has contravened that law. He has loved his neighbor and his neighbor's family better than himself, and historically his position is secure. The elaboration, however, of the same compelling principle demands that his name and his fame be not relegated to the memorial hall of those who have been useful, but that his qualities and abilities be turned into channels of authority, directing and, in some measure, controlling the course of events to the consummation of a healed and healthy world.

THE CARE AND MANAGEMENT OF THE BREASTS.*

By CHAS. W. DOUGHTIE, M. D., Norfolk, Va.

That the breasts of the pregnant woman should receive the most careful consideration and attention requires no argument to convince the thoughtful obstetrician, nor would it be necessary to attempt to convince the less careful obstetrician if he would but reflect upon the unfortunate cases which have not infrequently forced their attention upon him.

Pathological changes in the mammae are less frequent as we more fully recognize the rights of both the mother and the child, for whose well-being we are justly held responsible. We must admit, however, that unpleasant and unwarranted results do occur, even when we are spending and being spent in trying to prevent disease; not always because the profession is derelict in its duty, but frequently because we have to reckon with ignorance on the part of the poor misguided patient, her more ignorant but good-intentioned, self-conceited guardians, the family; and last, but not least, we suffer at the hands of that abomination, the self-styled nurse, whose chief credential and only qualification is that she has "done had fourteen head children

*Read before the Obstetric Section of the Norfolk County Medical Society, at Norfolk, Va., April 24, 1911.

herself." The most reprehensible, however, of all is the woman who has had the advantages of breeding, environment and education, but who refuses to make the slightest effort to prepare herself for the care of her infant; who willingly shirks the unequivocal obligation and deliberately delegates her mission to the Walker-Gordon laboratories.

The fact remains that we find inflamed and occasionally suppurating breasts; more frequently excoriated, fissured and retracted nipples. I am convinced, therefore, that a discussion of the care and management should not be shrouded in apologies; for we all desire to prevent these conditions, and cure them as expeditiously as possible should they unfortunately occur. My hope is to evoke an interest in my colleagues commensurate with the importance of the subject.

The care of the breasts should begin at the earliest date that pregnancy is known to exist. Perhaps I should be more explicit and say that the care of the breasts should certainly begin not later than the beginning of the seventh month of pregnancy; but the former statement holds good in so far as we are concerned. An inspection of the breasts should be made as early as one is engaged to attend the patient. This should reveal a normal, well-developed, non-nodulated breast; a smooth or slightly papular areola, surrounding a nipple which should protrude well beyond the surface and be of uniform size and shape till near the summit when it decreases in size. The length of the nipple varies in different individuals, the average being, perhaps, about one-third to one-half of an inch. The color of the areola varies in blondes and brunettes. In the former, we find a condition not so uniformly smooth, nor so dark as in the latter; also there are a greater number of papular elevations—the glands of Montgomery. Any marked deviation from the normal should receive prompt and intelligent treatment, with a view to correcting as far as is practicable the defect, instead of waiting until the demand cannot be satisfied.

Among the defects we find inversion and flat nipples. This condition may be either congenital or acquired, and is common as a result of corset pressure. The treatment consists in gently drawing out the nipples with the thumb and fore-finger, kneading and rolling, using a bit of olive oil to promote suppleness; or, what

I sometimes use, one of the small glass bells of a hyperæmia set, or of a nipple shield attached to a strong piston syringe of any variety by means of a stout rubber tube. The bell (sterilized) is placed over the nipple area and the piston is caused to slowly withdraw the air from the bell, leaving a vacuum that in time fills itself with the nipple, which becomes elongated in proportion to the degree of negative pressure. The glass bell should be small—not more than three-fourths or one inch in diameter. A grease gun, such as is used with automobiles makes an excellent apparatus for this purpose. Either of the above methods of manipulation should be performed with great care on account of pernicious results, which may follow the uterine contractions that might be evoked by these manipulations. Some advise the exposure of the breasts to the air, with a view of hardening, and, I dare say, it is of value.

There should be no great pressure over a breast during pregnancy. Bathing the breast with cold water is of value. To this, perhaps, may be advantageously added powdered alum, which has a tendency to harden and toughen the skin; or a lotion of \mathcal{R} Menthol, gr. x; Alcohol and Glycerine, aa $\mathfrak{z}\mathfrak{j}$ may be used on the nipples once a day.

Many have discarded the use of astringents altogether, believing that they cause the skin to retract in folds, which retain moisture, and predispose to fissures. To me this seems rational. If the skin is harsh and dry, use sterile lanolin or olive oil on the lateral surfaces occasionally, carefully avoiding the summit.

There is one thing which I have found invaluable in preparing the mammae for their functions; the use of hair cloth sewn to the linings, so that it will come in contact with the nipples and breast, the movements of the body setting up a friction which tends to cause a proliferation of the epithelial cells, and a marked toughening, very much the same as takes place in the small boys feet upon going bare-foot. The resistance is greatly increased thereby. This is disagreeable at first, but the patient will gradually become accustomed to it. I think it well to rub the breasts external to the areola occasionally with warm olive oil, as it makes the skin decidedly more pliable and elastic.

Pendulous breasts must be looked after, or there will form lumps in the lower margin due to torsion collapse of the lactiferous ducts, veins,

lymphatics, and the like; also pain in consequence of the above together with the dragging weight.

The treatment consists in slinging the mammae. This may be accomplished by a figure of eight bandage, taking in both breasts alternately as also the shoulders in the reverse order.

This brings us to the puerperium. Soon after delivery of the child, a well fitting breast binder of the Murphy, Sloane, or some other similar type, should be snugly applied. The pinning should be begun at the lowermost part of the binder and gradually extend to the uppermost; then the binder should be raised up and pinned over the shoulders. Care must be exercised not to pin too snugly, as the shoulder straps may, when fastened, make too firm pressure, the object here being to support—not to cause pressure.

After six or eight hours of sleep, the infant should be put to breast, not that there is milk, but for the purpose of drawing out the colostrum, stimulating uterine contractions, satisfying the infant and educating the mother up to her privilege and duty; or, if you please, for the moral effect. The nipples should be carefully sponged before each nursing with a 5 per cent. boracic acid solution, and after with alcohol. The nipples should never be handled now, because the danger of infection through the milk ducts is much greater, as they are now dilated at their orifices and filled with a suitable culture media for bacterial growth and development. Everything that comes in contact should be as nearly sterile as circumstances will admit. The infant's mouth should be washed frequently with some mild antiseptic solution, such as boracic acid solution, 2 per cent., or *mistura antiseptica alkalina*. The binder should be made of unbleached cotton, double thick, boiled, ironed, and sterilized, if possible. If a sterilizer is not available, the hot flat-iron does well as a substitute, unless the binder be subsequently contaminated prior to being applied. A few layers of sterile gauze should cover the breast before applying binder.

On the second day I have the breasts massaged external to the areola with a mixture of oil of peppermint in sterile olive oil, about one part in three or four, using a small quantity, and rubbing well into the breast with a clean, warm hand. Milk generally begins to

rapidly fill the breast at the end of the second or third day. It is then advisable to keep the binder snug and accurately fitting all surfaces of the breast, evenly distributing the support and pressure, but not sufficiently tight to check the milk formation entirely. The infant should nurse the breasts alternately, every two hours, save between 11 o'clock and day when there should be only one nursing. Should milk fill the breasts more rapidly than is required, it should be carefully massaged from the breasts, using hot moist flannel next to the breast while the massage is being done. This work is difficult of execution in the every day obstetrical practice because of the inefficient kind of nursing with which we have to contend. I find that there are few nurses who can massage a breast in such a manner as to relieve it of its excess and smooth out the lumps, this is not infrequently true of the graduate nurse. I, therefore, personally massage these breasts unless I am certain of the nurses capability. This work is admittedly irksome and tedious, but not near so distasteful as dressing a suppurative mastitis. "To achieve the best results from manipulation and massage of breasts, it is necessary to know its limitations as well as indications," along with a technique, which, it appears to me, must be largely intuitive, for some people can never be taught, just as some seem incapable of milking a cow.

The treatment is of great value for the relief of pain and tension of the breasts due to the engorgement with milk when the infant fails to empty the breast properly, especially when the nipple is sore; it is also useful in mastitis to empty the gland acini of their contents.

The technique varies, some prefer massaging the breast through a moist hot flannel; others by the direct method. There are three principal movements to be used in massaging a breast—viz., stroking with the hand placed flat on the surface, and with the fingers separated; the hand is slowly, but firmly, drawn from the circumference to the areola, the fingers being brought together as the latter is approached, the process being carefully repeated for five minutes, taking each surface consecutively. This process should be supplemented by catching the breast firmly in the two hands, making evenly distributed pressure from the base to the nipple with a rotary movement, to be followed by massaging from base to nipple with

direct stroke, and with extended fingers. Only enough pressure should be used to keep the milk flowing. The movements must be rapid, but gentle. Great care should be taken that no soiled cloths are used about the breast to catch the milk as it flows or in arranging the toilet for the nipple. Bacon, of Chicago, recommends the use of a large ice bag to a sensitive or acutely inflamed breast even in the early stage of suppuration. The breast must be protected from direct contact with the ice bag by means of a towel. Many noted obstetricians endorse the above. Personally, my experience has been very limited, but I have faith in the judicious use of ice in these cases. Sharp shooting or lancinating pains through the breast and shoulder, or the appearance of a red spot on any area of the breast, is an indication for the prompt application of an ice bag. The ice should remain until the pain and redness disappear, generally about six hours. I do not approve of the indiscriminate and prolonged use of ice, taking the ground that "a hand-saw is a good thing, but not to shave with." In some delicate or hypersensitive women it may be inadvisable to use the ice bag at all. In these cases, cold wet dressings of lead water and alcohol (two parts to one) may be used; this should be covered with waxed paper.

Many, perhaps as eminent as Bacon, prefer hot boracic acid dressings. These, too, have unquestionably a field of usefulness; especially in those who are hypersensitive to cold and where suppuration is markedly evident clinically, but not well enough marked topographically to warrant immediate incision and drainage.

Localized abscesses in the areolar area have their beginning most frequently through the migration of the omnipresent staphylococci from their abiding place in the skin, into the glands of Montgomery, which are seen as papular elevations studding the areola.

The prophylaxis consists in forbidding the handling of the area, and in frequently swabbing the region with ethylalcohol. Should abscesses develop, incise promptly, drain, wash out, or swab out with a 5 per cent. solution of tincture of iodine, and apply a sterile dressing. When clean, seal the wound with flexible collodion and absorbent cotton, having first compressed its edges.

Great care must be exercised at all times to prevent infection of the breast proper through

the openings in the nipple, and especially when treating these small abscesses. "Sore nipples" is a term used to designate erythema, erosions, excoriations and fissures. These are due to negligence in properly preparing the breast before parturition, prolonged nursing, or the dirty mouth of the nursing.

Fissures are of three principal types; the transverse fissure of the summit; those of the lateral surfaces, and those of the base. They result from inattention to the simpler forms of "sore nipples." Treatment—promptly withdraw the child from the affected breast as many hours as is possible and use a glass nipple shield when the child finally has to be applied. Sponge nipples after nursing with alcohol preferably, or a 5 per cent. boracic acid solution. Forbid the mother or nurse to touch the nipples with the fingers. Touch the fissures with a fine caustic pencil if they are resistant, and especially the crescentic type. A mixture of compound tincture of benzoin one part, and glycerine, three parts, is a serviceable application. When the fissures are clean and show a tendency to heal later on, flexible collodion with absorbent cotton may be applied, thereby completely protecting. This should never be used, however, until the fissures are perfectly clean.

An acute suppurative mastitis may occur at any period of gestation and is due to two causes, infection through the nipple orifice or fissure, due to handling with soiled hands, or by contact with soiled clothing, etc.; also, what is perhaps most frequent at this stage, traumatism. It occurs during the nursing period from the same causes, but now most frequently from the former cause. Failure to empty the breast may cause a pressure necrosis with suppuration; this latter may likewise be the result of undue harshness in manipulation. A further cause may be found in the lack of a proper support, producing a torsion collapse with strangulation of milk ducts and blood supply, as previously suggested.

The diagnosis is based on the systemic symptoms—chills, fever, sweats, with increased pulse rate and the local manifestations, pain, swelling, redness and finally fluctuation.

The treatment consists in the removal of the child from the breast; the application of an ice bag; bathing nipples and areola with alcohol; and using a sterile covering of gauze. When symptoms are localized, prompt and free incision along a line that radiates from the nipple

toward the circumference should be made. If fluctuation exists, incise the area. If there is doubt that the abscess can be satisfactorily drained through such an incision, a counter incision in the most dependent portion of the breast should be made, and free drainage established. If the abscess is interstitial, this should be always done. In so doing, it is well to work the gloved finger to a point under the skin, following the line of least resistance; incise skin over finger, shove a stout artery forceps between the structures to meet finger, open the blades and withdraw while open. The examining finger should search out and break up all pockets.

A large fenestrated drainage tube should be inserted, and a gauze pack should surround same at all points of contact. Some advise irrigating the cavity with saline. This is not essential, but perhaps advisable in many cases. The drainage tube should remain no longer than there is free drainage. After discarding, a gauze pack should be loosely inserted for a few days. This should be rapidly decreased as all drains have a tendency to perpetuate drainage by their own irritation. In my experience, the only preparation required is to paint the breast with tincture of iodine.

Dr. Tweedy, chief of the Rotunda Hospital, incises without the use of an anæsthetic, packs with gauze for twenty-four hours, removes, irrigates, and loosely packs for three subsequent days; then he discards packing. He reports 100 per cent. of cases cured. I do not believe in the ineffectual drainage which is likely without an anæsthetic, but advise a general anæsthetic, having everything in readiness when the anæsthetic is started, so as not to prolong the anæsthesia.

Among the reasons for discontinuing nursing and checking the milk secretions are death of child, lung and throat tuberculosis, serious heart, lung and other general disease, in unmarried women who have to give up child, and the recurrence of pregnancy.

The following do not constitute sufficient reasons—return of menstruation; the acute infectious diseases, nor syphilis.

The method employed should consist of a binder tightly applied, after first having emptied the breast, compression and not support now being the object. Keep them firmly bandaged. A saline cathartic and a dry diet

very much aid in checking the secretion of milk.

To promote the milk flow, there are four factors. The nursing child is the best stimulant; a good mixed dietary with a moderate amount of nitrogenous food, so served as to be gastronomically tempting; plenty of water and fresh air. Breast-pumps and cupping I mention to condemn as being more harmful than beneficial. Poultices have no place in the armamentarium of the surgeon or obstetrician and should be condemned as hot-beds for germs, affording all that they require for development and growth—viz., heat, moisture and pabulum. If heat is indicated, use the hot boracic acid pack, but this I do not recommend save in the beginning of a cake breast as a preparatory measure for massage.

Weaning should take place between the ninth and twelfth month. No child should be permitted to continue nursing longer than the tenth month unless it is very delicate; then, never beyond the twelfth.

Many women believe that they cannot become pregnant while nursing their child, and accordingly prolong this function into the second or third year; as a result harm is done to both. Nature does not permit her prerogatives to be usurped without demanding alimony.

Proceedings of Societies, Etc.

NORFOLK COUNTY MEDICAL SOCIETY— OBSTETRICAL SECTION.

Reported by FRANK H. HANCOCK, M. D.

The paper* of the evening, April 24, 1911, was read by Dr. Chas. W. Doughtie on the

Care and Management of the Breast.

DISCUSSION.

Dr. Herbert Old opened the discussion and generally disagreed with the essayist as to the care and management of puerperal breasts. He believed that the treatment suggested by Williams, of New York, was a distinct advance over the methods proposed in the paper of the evening.

For suppression of the lacteal secretion instead of the tight rubber bandage with ordinary muslin binder over all, plus the administration of saline cathartics and reduction of the intake of fluids to a minimum, these latter resulting in great thirst, as well as inconven-

*See paper on page 145.

ience of bowel movements, from both of which patients usually complain, this simple procedure has been introduced. No binders are placed on patients with small or medium-sized breasts, and only a loose supporting binder is used when these glands are large or flabby. Compression is not made, but only such support as will hold the breasts in place on the anterior thoracic wall and prevent sagging, which would of course, produce angulation at the point where the vessels leave the breasts, and result in consequent kinking.

In exceptional cases of very large breasts, cotton pads have been placed along the outer margin of the breasts and retained in position with adhesive strips; when caking occurs and the patient complains of pain, one-fourth to one-half grain of codeine is given every four hours. Neither restriction of fluids nor purging is required, one bowel movement in twenty-four hours being all that is necessary.

A report in the Bulletin of the Lying-in Hospital, New York, showed that, of 100 cases treated this way, not a single abscess developed. When caked breasts developed at all in this series, they only lasted from one to three days, and did not require more than three or four doses of codeine each. In cases that did not nurse, the caked condition of the breasts only lasted three or four days, and by the time the patients went home the breasts were either dry or contained only a slight amount of milk. *Where abscess formation seemed imminent, no difference was made in the treatment, but the symptoms nevertheless abated in a few days in every case.*

Dr. Israel Brown congratulated *Dr. Old* upon his conversion to the simple procedure which he had so definitely outlined, and declared the profession greatly indebted to the common sense of *Williams* who had thus swept aside the cumbersome ceremonial of the past. Dwelling upon this, and other mutations of the profession, the speaker recalled the elaborate care bestowed upon the puerperal breast by members of this section, and cited especially an involved harness-like apparatus used and advocated by *Dr. Old* to compress and sling the breast, the complexity of which, he said, had always defied his own powers of analysis. He was pleased that rest, non-interference, and quiet had been found so much more beneficial and were about to succeed the bewildering ritualism of a short time ago.

Dr. Chas. W. Saunders had had but one case in 310 cases of obstetrics. His method was to soften the nipple and breast with oil applications. He believed that alcohol, glycerine, and alum were contraindicated.

Dr. Chas. W. Grandy preferred the use of Bier's cups in caking or threatened abscess. He dwelt upon the essentials of good nursing, the use of 2 per cent. boracic acid solution to bathe the nipples before and after nursing, and for cleansing the child's mouth, and suggested the use of nipple shields in excoriations or fissures.

It developed that 2 per cent. iodine solution promised successful results in fissures or excoriations.

Some authorities were quoted to the effect that 20 grains of acetate of potash three times a day was of service in drying the breast, but the question was not discussed, the Section apparently regarding it as academic.

Analyses, Selections, Etc.

Meddlesome Urethral Therapy.

Professor Von Zeissl (*Editorial, International Journal of Surgery*), the well known Viennese genito-urinary specialist, has recently said that protracted and much treated cases of gonorrhea often get well if a check is put to therapeutic over activity and the much tortured urethral mucosa is left in peace.

To us there seems a great deal of truth in this statement. Since the discovery of the gonococcus as the cause of gonorrhea, the sole aim of treatment has been its eradication. The modern physician is no longer content to regard the cessation of the discharge as synonymous with the cure of the disease and is not satisfied until repeated tests show the complete absence of the gonococcus. No fault can be found with such a policy in view of the well-known elusiveness of this organism and the difficulty of expelling it from the urethra and its appendages. Yet it cannot be denied that in the achievement of this object too much attention may be paid to the pursuit of the gonococcus and too little to the patient himself. As long as examinations reveal its presence, no one can object to persistent efforts to secure its destruction. There is, however, a not infrequent class of cases in which patients continue to exhibit mucous filaments in the urine or a urethral mucoid dis-

charge, though no gonococci can be detected. It is to these cases that the above remarks are particularly applicable.

These symptoms may be the result of excessive therapeutic activity—the effect of too long continued deep injections, irrigations, massage of the prostate and vesicles and instrumentation. While the shreds in the urine generally point to the existence of an inflammatory process, their persistence after repeated negative gonococci findings may logically be attributed to meddlesome therapeutics. Not infrequently, when the patient is left alone they, as well as the discharge, disappear spontaneously.

The time has come when physicians should take to heart Von Zeissl's admonition, and while not relaxing their efforts to eradicate the infection as long as there is evidence of its presence, they should not overstep the mark and keep up treatment which is not only unnecessary, but responsible for the continuance of the inflammatory process.—(*Southern Medicine and Surgery*, March, 1911.)

X-Ray Diagnosis in Renal and Bladder Lesions.

Lewis G. Cole (*The Postgraduate*, January, 1911,) says that at present there are very few surgeons in the large cities who would even consider exploring the kidney for calculus without first having had a radiographic examination, and if these plates are negative and show sufficient detail to justify one in making a negative diagnosis the surgeon is extremely cautious about exploring the kidney for calculus. There is, however, a larger group of cases in which the symptoms are not sufficiently characteristic to justify the surgeon in even considering operating for calculus. These cases should be examined radiographically. They may present only one or two symptoms of calculus; for instance, the only symptom may be a small amount of pus persistently in the urine without pain or tenderness either in the kidney or along the ureter. On the other hand, the patient may have only dull pain in the back without any of the characteristic pain radiating down the ureter. This is the group of cases in which the largest percentage of the calculi is found. A large percentage of the cases which have the most typical attacks of renal colic have no calculus which can be found on radiographic examination; and if these cases are operated on,

in spite of the X-ray, the calculus usually will not be found, although the operation may relieve the pain.

In some cases, these attacks of renal colic are caused by a kink in the ureter as shown by the unusual position of the kidney. In other cases, these attacks are due to fine crystals passing through the ureter. These may even cause blood in the urine, but are not large enough to be shown radiographically and are not large enough to justify operative procedure even if they are shown.

A calculus in the right ureter resembles the pain of a chronic appendicitis so closely that some of the more careful surgeons make it a practice to have nearly all their cases of the latter radiographed before operation to avoid the error of operating for appendicitis when the cause of the symptoms is a stone in the ureter.

A radiograph shows not only the presence of a calculus, but whether it will pass through the ureter into the bladder is determined by its size and whether it is rough or smooth. The roughness of the edges of a calculus is a very important factor in determining this question, as a calculus of unusual size with a smooth round surface will pass through the ureter while a relatively small one with rough edges will lodge permanently in the ureter and require operative procedure for removal.

Since we have been able to show the size, shape and contour of the kidney very accurately, we are able to detect new growths by the increased density and irregular contour. The injection of collargol or argyrol into the pelvis of the kidney by means of ureteral catheterization has increased the field of radiographic diagnosis very materially, and by this method of examination we are able to state the size and shape of the pelvis and calices and the course of the ureter.

While nearly all surgeons use the X-ray for cases which they think are calculi, there are comparatively few who have their cases radiographed when the symptoms are not typical. The author makes a plea for radiographic examination of all cases with obscure symptoms, any one of which is referable to the kidneys; and calls attention to the fact that many lesions other than calculi can be definitely diagnosed by this method of examination.—(*Medical Review of Reviews*, May, 1911.)

A Contribution to the Diagnosis of Duodenal Ulcer.

M. Gross, New York, thinks that duodenal ulcer is a common disease, more so than gastric ulcer. The characteristic symptoms are painful dyspepsia, violent attacks of "hunger-pain," regurgitation or vomiting of acid masses, lessening of symptoms after eating and alkalies, hyperchlorhydria and hypersecretion. The diagnosis is confirmed by the finding of small masses of blood floating on the duodenal contents which have been aspirated. The presence of this blood should be established by tests. Physical signs include a tender point and rigidity of the abdominal muscles to the right of the parasternal line at the level of the duodenum. Excessive hemorrhages and perforation are very rare. The author regards Einhorn's bucket and thread test as unreliable, and advocates instead the use of his duodenal tube with its little silver ball.—(*Medical Record*, April 22, 1911.)

Correspondence.

Circular Relative to Acute Epidemic Poliomyelitis Issued by American Orthopedic Association and American Pediatric Society.

BUFFALO, JUNE 6, 1911.

Mr. Editor:

Anterior poliomyelitis is, so far as known, a communicable disease, being communicated from one patient to another and also by means of a third person. It occurs in epidemics and tends to spread along the lines of greatest travel. There is reason to believe that it is prevented from spreading by quarantine, and with the very great prevalence of the disease in the Summer of 1910 it is the opinion of this committee that it is essential that it should be made a reportable disease in all States in order that its presence may be detected and its spread guarded against.

Of particular significance are the so-called abortive cases, where indefinite ailments occur in children in communities where frank paralysis also exists. These abortive cases of infantile paralysis are undoubtedly a source of infection, and their record and study is of much importance. In a community where cases of infantile paralysis occur, cases of illness with sudden onset of fever and meningeal symptoms should be closely watched and regarded as pos-

sibly infectious. In such cases even recovery without paralysis does not establish the fact that the case was not abortive infantile paralysis.

All cases of infantile paralysis should be strictly quarantined, sputum, urine and feces being disinfected, and the same rigid precautions adopted as in scarlet fever. This quarantine should, in the opinion of the committee, last for four weeks in the absence of definite knowledge as to when the infection ends. Children from infected families should not be allowed to go to school until the quarantine is abandoned. The transportation or transfer of acute cases in public conveyances should be strictly forbidden. It would be very desirable to adopt provisional quarantine measures in suspicious cases in a community where an epidemic prevails. The report of all cases of infantile paralysis to the public health authorities should be enforced by law, and all deaths from this cause should be properly described and registered. A careful study of epidemics by public health authorities is strongly advised.

(Signed) ROBERT W. LOVETT, M. D.
(Chairman),

HENRY KOPLIK, M. D.,
H. WINNETT ORR, M. D.,
IRVING M. SNOW, M. D.,
Secretary.

Book Notices.

Practical Medicine Series—Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the general editorial charge of GUSTAVUS P. HEAD, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School, and CHARLES L. MIX, A. M., M. D., Professor of Physical Diagnosis in the Northwestern University Medical School. VOL. VIII.—*Materia Medica and Therapeutics, Preventive Medicine, Climatology.* Edited by GEORGE F. BUTLER, Ph. G., M. D.; HENRY B. FAVILL, A. B., M. D., and NORMAN BRIDGE, A. M., M. D. Price, \$1.50. VOL. IX.—*Skin and Venereal Diseases, Miscellaneous Topics.* Edited by W. L. BAUM, M. D., and HAROLD N. MOYER, M. D. Price, \$1.25. VOL. X.—*Nervous and Mental Diseases.* Edited by HUGH T. PATRICK, M. D., Professor of Neurology, Chicago Polyclinic, Clinical Professor of Nervous Diseases, Northwestern University Medical School, etc., and PETER BASSOE, M. D., Assistant Professor of Nervous and Mental Diseases, Rush Medical College. Price, \$1.25. Series 1910. Chicago. The Year Book Publishers, 40 Dearborn Street. Cloth. 12mo. Price for the series of 10 volumes—\$10.

Each of the three volumes above is one of a series of ten issued at about monthly intervals,

the series covering the whole field of medicine and surgery for the year prior to publication. Intended primarily for the general practitioner, the arrangement into several volumes enables the specialist to purchase only such parts as he may desire. Important advances in medical science have been culled by the several editors from journal literature everywhere, and collated under the special departments to which the various subjects belong. A regular subscription to each yearly series would do much toward placing in the physician's office, in combination with his usual text-books, a working modern library.

Editorial.

Obtaining Blood for the Wassermann Reaction.

Venupuncture is perhaps the best means of drawing blood for the Wassermann reaction. By this means, a relatively large quantity of blood is easily obtained, rendering it possible to repeat the reaction with the same specimen if necessary. Also, by this method the blood is drawn sterile if proper treatment of syringe and needle has preceded.

In actual application, the method is simple. The skin is sufficiently cleansed by treating the site of the puncture with 50 per cent. tincture of iodine made by diluting the official tincture one-half with 95 per cent. alcohol. This is rubbed on with a bit of ordinary cotton a few minutes before the puncture is made. Sterilization of the syringe and needle is accomplished by means of 5 per cent. carbolic acid in which the syringe is allowed to remain ten minutes. The film of carbolic adhering to the syringe and needle need not be removed, as such a minute amount of the antiseptic does not interfere with the test, though it must be remembered as a general principle that, in any event, no preservative whatever should be added to the blood. Boiling of the syringe for three minutes may also be resorted to, particularly if it be of the all-glass variety or has asbestos packing and no rubber parts.

The needle should be of sufficient calibre to obviate the possibility of clotting, as may happen if a very small needle is used. About 21-gauge is suitable. Instead of employing a syringe, such a needle may be attached to a short piece of sterile rubber tubing and the

blood allowed to flow without suction, which it will do if the needle is large enough and a large vein be selected.

The median basilic vein is usually chosen, the arm is bound above or grasped by the patient, and the needle is introduced in the direction of the blood current. I have found this technique more convenient than attempting to direct the needle against the current, and the blood flows equally well, particularly when suction is employed. Entrance is facilitated by steadying the vein below with the thumb of the left hand while the fingers grasp the arm. The direction of the puncture should be oblique and the edge of the needle in a plane vertical to the wall of the vein. Care should be taken not to pass the needle entirely through but to stop immediately the vein is punctured. Touch serves to determine the moment when the needle has passed through the wall, as a peculiar lack of resistance is noted once the point is well within the lumen. The blood is now seen welling up into the barrel of the syringe and by slowly drawing out the plunger the desired quantity is obtained, usually about 5 c.c.

The site of puncture needs no dressing or subsequent treatment. The flow of blood stops spontaneously shortly after the needle is removed. A small hematoma will result if blood be allowed to escape into the areolar tissue and discoloration will follow, but this is of no consequence and the patient suffers no inconvenience whatever.

Many times, for obvious reasons, it will be inconvenient or impossible to obtain blood by venupuncture and resort must then be had to skin puncture. Blood obtained in this manner is entirely suitable for the test; indeed, quite as suitable in every important respect as that obtained by venupuncture. The lobe of the ear is cleansed with alcohol and wiped dry. With a small, sharp-pointed lancet a deep puncture is made and the blood collected in a glass capsule or into an ordinary one-dram phial. Very little pain is experienced, and it is very little trouble to secure by this method half a dram of blood, an amount entirely adequate for the test. As the drops collect, they should be wiped off into the container by passing the lips of the container over the mouth of the wound, thus preventing any tendency to clot upon the skin. Squeezing and manipulation of the ear is necessary, but as this is not a sensitive part,

the patient does not object. No special aseptic precautions are necessary. Brief cleansing of the part suffices and the container need be chemically clean only. Suitably corked, it may be sent by ordinary mail without any special measures to preserve it in transit.

WILLIAM A. SHEPHERD, M. D.

University of Virginia, Medical Department.

The Commencement Exercises of the Medical Department of the University were held in connection with those of the University proper, June 11-14, inclusive, and as on former occasions these days were filled with various exercises and entertainments in which the medical graduates participated.

The list of graduates in medicine, with their appointments to hospitals, etc., is as follows, the three not placed, having declined several opportunities:

William Harvey Cabaniss, Maxeys, Ga.; University of Virginia Hospital.

Horace Victor Cornett, Spring Valley, Va.; City Hospital, New York.

Thomas Newman Davis, Jr., Lynchburg, Va.

Martin Barbour Hiden, Newport News, Va.

Edwin Wilson Holladay, Charlottesville, Va.; Bellevue Hospital, New York.

John Lobban Kable, Staunton, Va.; Red Cross Hospital, New York.

Aubin Tilden King, Richmond, Va.; Post-Graduate Hospital, New York.

Frank McLean, Maxton, N. C.; Waltham Hospital, Waltham, Mass.

Dan Royall Murchison, Jr., El Paso, Texas; Polyclinic Hospital, Philadelphia, Pa.

Edmund Cape Payne, Birmingham, Ala.; University of Virginia Hospital.

Frank Marion Payne, Birmingham, Ala.; University of Virginia Hospital.

Rufus Tinsley Reid, Davidson, N. C.; Bellevue Hospital, New York.

Frederick Casper Rinker, Upperville, Va.; Polyclinic Hospital, Philadelphia, Pa.

James Henry Scroggins, Morrilton, Ark.

Francis Pelzer Smart, Charlottesville, Va.; *Instructor in Anatomy*, University of Virginia.

James Alexander Waddell, Charlottesville, Va.; *Adjunct-Professor of Pharmacology and Materia Medica*, University of Virginia.

Benjamin Earl Washburn, Rutherfordton, N. C.; James Walker Memorial Hospital, Wilmington, N. C.

Charles Laval Williams, Boston, Mass.; U. S. Marine Hospital, Boston, Mass.

Chester Anderson Witmer, Quarryville, Pa.; Harrisburg Hospital, Harrisburg, Pa.

Hunter Samuel Woodbery, Chaires, Fla.; University of Virginia Hospital.

We note with especial interest that fourteen of these twenty graduates are degree men from the academic departments of various colleges and universities.

Changes in the Medical Faculty, besides the additions named above, are Dr. J. C. Flippin advanced to Professor of Clinical Medicine, and Dr. H. E. Jordan, to Professor of Histology and Embryology; Dr. E. A. Purdum was made Instructor in Bacteriology and Pathology, and Dr. J. H. Neff, Jr., Instructor in Surgery.

Chronic Appendicitis.

Elsewhere in this issue of the *Semi-Monthly* is an article on the significance of pathology from the ileo-cecal fold. There has recently been so much attention attracted by the discovery by Mr. Lane of a definite condition in the last few inches of the terminal ileum that much interest has been aroused in all of the ligaments and bands, both pathological and normal, that occur in this region. Certain it is that there are many cases of chronic appendicitis operated upon by excellent surgeons who have not been cured of their symptoms solely by the removal of the appendix. Any suggestion that will tend to greater thoroughness, both in examination of the local conditions and in an attempt at their correction, will produce a larger percentage of permanent cures and less complaint of continued symptoms of appendicitis after the appendix has been removed.

Every case of chronic appendicitis should be carefully examined to exclude such diseases as stone in the kidney or ureter, spinal disease, ulcer of the duodenum, cancer, tuberculosis and pure neurasthenia. As we know, the term neurasthenia covers a multitude of sins, and the more carefully cases are studied the smaller is the number of cases of idiopathic neurasthenia. Any procedure that can cure these chronic sufferers will not only be a benefit to the patient, but a God-send to the physician.

Repeal of the State License Tax on Physicians.

Dr. George A. Stover, Chairman of the Legislative Committee, Medical Society of Virginia,

recently issued a circular letter to all members of the medical profession in Virginia, urging upon them the necessity of bringing this matter to the attention of candidates for membership in the next General Assembly of Virginia early in the campaign, instead of waiting for them to be elected, with the hope of securing their attention later. All physicians desirous of securing the repeal of this unjust tax, which has been abolished by all but two other States of the Union, should secure promises of assistance from candidates before pledging them their votes. Dr. Stover aptly remarks that a candidate's hearing, while generally acute *before* election, is frequently impaired *after* election.

In connection with the above, we note several doctors are in the field for election to both the State Senate and the House, and we believe it is only necessary to mention the fact, to secure for them the co-operation of all members of the medical profession in their localities.

Association of Surgeons of the Norfolk and Western Railway.

The fourth annual meeting of this Association, held in Richmond, Va., June 15-16, is now associated with other meetings as a pleasant memory. The President, Dr. Southgate Leigh, of Norfolk, Va., was in the chair, while the Secretary, Dr. J. R. Garrett, of Roanoke, Va., was at his desk.

Following the formal opening exercises, which were attended by many ladies, as well as by the chief surgeons of two other railway companies—Drs. Jos. M. Burke, of the Seaboard Air Line, and C. W. P. Brock, of the Chesapeake and Ohio a number of papers on scientific subjects were read. The social part of the program was most enjoyable. The ladies accompanying the surgeons were entertained on the evening of the first day by a trolley ride through the city, followed by a reception at the Commonwealth Club, while at the close of the afternoon session, the surgeons enjoyed a similar ride, and were entertained in the evening at the Westmoreland Club by Drs. George Ben. Johnston and A. Murat Willis.

The second day's session was held on the Steamer Pocahontas during a day-light trip down the James River to Norfolk. Luncheon was served on the boat, and the party reached Norfolk in time to catch a "Special" over the Norfolk and Western Railway to their respec-

tive homes. Throughout the meeting, the Chief Surgeon, Dr. Jos. A. Gale, and his son and assistant, Dr. S. S. Gale, were untiring in their efforts to make the meeting a success, and those in attendance are much indebted to them and other officials of the road for their generosity in providing for many of the pleasures of the occasion.

Officers elected for the ensuing year are: President, Dr. Geo. Ben. Johnston; vice-presidents, Drs. W. R. Williams, Richlands, Va.; J. F. Fox, Bluefield, W. Va.; N. P. Oglesby, Columbus, O., and J. W. Simmons, Martinsville, Va.; secretary-treasurer, Dr. J. R. Garrett, Roanoke, Va.; and Executive Committee, Drs. Jos. A. Hall, Cincinnati, O.; N. P. Oglesby, Columbus, O.; R. W. Holmes, Chillicothe, O.; J. P. Haller, Pocahontas, Va.; W. E. Anderson, Farmville, Va., and J. S. Rardin, Portsmouth, O. The next annual meeting will be held at Columbus, O., during the latter part of May, 1912.

The Southside Virginia Medical Association

Held its thirty-third stated session at Petersburg, June 13th. There was a large attendance and a number of interesting papers were presented, the meetings being held at the A. P. Hill Camp Hall. Dr. J. Shelton Horsley gave a clinic at the Central State Hospital in the afternoon, after which the members adjourned to the Country Club, where they were entertained by the Petersburg Faculty. Later the reading of papers was resumed, and unfinished business was taken up. Emporia was decided upon as the place of the September meeting, and Dr. W. B. Barham was appointed leader of the discussion for that meeting. The same officers as named in a previous issue will also act at that time.

Dr. W. E. Jennings,

Who has been resident physician at Catawba Sanatorium since the first of March, has tendered his resignation to take effect July 7th, at which time he will enter upon general practice. Dr. Jennings was assistant resident physician to the Sanatorium before being appointed resident physician to succeed Dr. Tewksbury, and has filled both positions most acceptably.

Dr. John J. Lloyd, Jr., assistant resident physician for the past few months, will take

charge of the Sanatorium after the 6th of July, until the State Board of Health meets and appoints a successor to Dr. Jennings.

Rabies Specimens.

As the Virginia Health Department is not prepared to make examinations of heads of animals suspected of rabies, arrangements have been made with the Federal Government, to have specimens from Virginia shipped direct to the United State Hygienic Laboratory at Washington, "provided they are sent direct by express, prepaid and carefully packed in ice."

Passed Assistant Surgeon L. L. Lumsden,

A Virginian, and a former graduate of the University of Virginia, has been detailed by the United States Public Health and Marine Hospital Service, to assist the Virginia Health Department during July and August in its investigation of typhoid fever in the rural districts. Dr. Allen W. Freeman will study the disease especially in the cities, and Dr. Roy K. Flannagan in the small towns. The members of the Health Department feel that they are particularly fortunate in securing the co-operation of Dr. Lumsden, who is an expert on epidemics, and one of the best known authorities in the country on typhoid fever.

Virginia Doctors off for the A. M. A. Meeting.

Drs. Christopher Tompkins and Charles M. Hazen will attend the meeting of the American Medical Association in Los Angeles, California, as representatives from the Medical College of Virginia, Richmond.

Drs. W. E. Anderson, Farmville, and L. T. Royster, Norfolk, also expect to attend the meeting.

The Roanoke Sanitarium,

For the treatment of nervous and mental diseases, drug and alcoholic cases, was formally opened June the 13th, at which time the public was also invited to inspect the institution. Dr. W. S. Slicer, an assistant at the Lewis-Gale Hospital, as well as a surgeon on the Norfolk and Western Railroad, is physician-in-charge.

Dr. Charles T. St. Clair,

Who has been practicing in Tazewell, Va., since entering upon his professional career, will locate in Bluefield, W. Va., about the first of

July, and will confine his practice to the eye, ear, nose and throat diseases.

Dr. E. T. Brady,

Abingdon, Va., will leave about the first of July to take a special course for several months in röntgenology and skin diseases, in some of the larger Northern clinics.

Marriage Announcements.

Dr. Harry Taylor Marshall, University, Va., and Miss Nancy Lea, Ivy, Va., June the 17th.

Dr. Matt Otey Burke, Richmond, Va., and Miss Elizabeth Armistead, Upperville, Va., June the 7th.

Wanted—Position in Southern hospital, by a graduate nurse from Pennsylvania Hospital. Specially trained in surgical work. Open for engagement after July 1, 1911. Address "G. D.," care *Virginia Medical Semi-Monthly*.

Obituary Record.

Dr. Joseph Price.

It is with deep regret that we announce the death of Dr. Price, of Philadelphia, following an operation for appendicitis, on June 6th. Only about four hours previously, he had operated on a similar case successfully. In his death, the medical profession has lost one of its most honored members and leaders.

Dr. Price was a native of Virginia, having been born in Rockingham County, Va., January 1, 1853. He received his academic education in New York, after which he took up the study of medicine, graduating from the University of Pennsylvania in 1877. He was a pioneer in abdominal surgery, and has for many years been one of the foremost gynecologists of the country. In recognition of his eminent services to the science of medicine and surgery, and of his contribution, for several years, of a prize for the best worthy essay by a member of the Medical Society of Virginia, on "History of Medicine and Surgery in Virginia," he was elected an honorary member of this Society in 1892. He has always taken an active interest in the proceedings of this Society, as also in the many local, State and national societies of which he was a member, in many of which he has held official positions, and in all of which he will be greatly missed.

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SURGICAL TREATMENT OF "INDIGESTION."*

By J. E. RAWLS, A. B., M. D., Suffolk, Va.
Surgeon to Lakeview Hospital, Etc.

At first thought this subject may suggest radicalism in the extreme, but not so. There is no theme in the "science of the healing art" that concerns both the surgeon and the general practitioner more than that of "indigestion." The term "indigestion" is used in its broadest sense, and covers the many gastric disturbances of which humanity is heir. The stomach, because of its peculiar nervous mechanism, has been likened to a telephone central. Here impressions or disturbances are received and interpreted by the victim as gastric origin, which in reality is not only indicative of local disease, but pathological conditions of distant organs.

The etiological factors of "indigestion," or gastric disturbances, are many and varied. Chronologically considered, "indigestion" may be divided into two types, acute and chronic, and it is this latter form and its etiology of which we wish especially to speak.

The causes of chronic "indigestion," or gastric disturbances, are quite numerous; however, in this paper we wish only to emphasize peptic ulcer, gastric cancer, gall-stones and chronic appendicitis as etiological factors; and here surgery has a great field of usefulness and experiences some of the most charming and perfect results.

The symptoms of chronic peptic ulcer, gastric cancer, gall-stones and chronic appendicitis simulate each other very closely in the chronic stages. Pain, gas, vomiting, sour eructations, burning stomach, and a general gastric distress are common to all types of chronic dyspeptic trouble, and here differential diagnosis is dif-

ficult and uncertain, so we have to resort to their early histories for differentiation.

In the early stage of peptic ulcer, food taken gives ease. The patient suffers with pain and other gastric symptoms when the stomach is empty, and on taking food the pain, with its accompanying symptoms, is relieved from one to five hours, and then the distressing symptoms return. This characteristic regularity, day in and day out, meal after meal, during the period of attack can hardly be confounded with any other pathological lesion or functional disorder. Let it be remembered that this "food ease" is almost pathognomonic of peptic ulcer.

In cancer of the stomach a tumor is often detected early. Statistics show that about 95 per cent. of all tumors of the stomach are cancerous. It has been demonstrated microscopically that about 71 per cent. of gastric carcinomata had their origin in old ulcer scars, and nearly one-half of the cancer cases gave a long preceding ulcer history. The pain in cancer is more continuous, but not so pronounced as in ulcer. It is a dull, sickening, depressing ache, and usually increased immediately after meals, thus differing from that of ulcer. Vomiting, loss of appetite and other gastric symptoms become continuous, and then emaciation, pallor, anemia, weakness and languor progress rapidly. Accompanying these symptoms, there is a mental depression as if conscious of some grave physical condition. The patient, at first glance, seems to have a resigned look. This mental attitude, with the other signs and symptoms, will, as a rule, aid us in arriving at a true and definite diagnosis. The test-meal is of great service here.

In gall-stone conditions we have, as a rule, an early history of the so-called typical gall-stone attacks. Sudden, severe pain in region of gall-bladder or stomach, radiating to the right and through to the scapular region. This is accompanied with other gastric disturbances. These attacks come on suddenly, last from a

*Read before the Seaboard Medical Association of Virginia and North Carolina, at Kinston, N. C., December 6-8 1910.

few hours to several days, and end abruptly, followed by a varying period of comparative good health. Later in the course of this disease, gall-bladder complications arise, such as adhesions, duct-obstructions, perforations, infections with pancreatitis, which give a chain of gastric symptoms similar to those of chronic ulcer. So the development of an early history is essential to a true diagnosis.

In chronic appendicitis the patient comes to your office complaining of stomach trouble—indigestion. We find him more or less neurotic. He will tell you for the past five or ten years he has been feeling bad and suffering with his stomach—sometimes better and sometimes worse. Has sour stomach, gas, feels bloated, burning sensation in stomach followed at times by eructations of gas and regurgitations of irritating fluids and particles of food. There may be nausea and pain, but the pain is a queer continuous epigastric or indefinitely abdominal distress rather than acute type. These symptoms, as a rule, are worse immediately after meals. The kind of diet does not seem to modify the symptoms much. The symptoms vary in degree with the same diet. Patient is at times unable to work, and becomes easily exhausted. On questioning him closely we find that the pain, as a rule, radiates toward the umbilicus or lower abdomen, unlike that of gall-stones, and is increased by food, thus differing from that of ulcer. On pressure a tender area, of which the patient had been previously unconscious, can often be elicited at the McBurney point. Quite frequently can develop an early history of acute intestinal colic lasting from one to several days. Especially is this so in childhood. The test-meal gives nothing definite. The stomach contents vary—being at times normal and at other times abnormal.

I will illustrate this clinical form of "chronic indigestion" by reporting the history of a case which I was called to see September 1, 1909, and found the patient suffering with the usual typical symptoms of acute appendicitis.

History.—J. R., male, white, age 37, occupation carpenter. Family history, negative. Personal history: Thirteen years ago had an attack of indigestion and liver trouble, being thus pronounced by the attending physician. This attack lasted for two or three weeks. On questioning the patient closely, I found that he suffered with symptoms similar to those of acute appendicitis. The patient gradually re-

covered from the acute attack and resumed his usual work. A year or so later he began to have distressing stomach symptoms, "indigestion," as he called it. Suffered with a gassy, bloated feeling, sour stomach, burning sensation, eructation of gas, regurgitation of food at times, and pain of an indefinite character in his stomach. These symptoms were worse after food, but the character of the food did not seem to modify the distressing conditions—was at times better and then worse, independent of the kind of food taken. Troubled with constipation. Unable to work at times, and seemed to be easily exhausted. Took all kinds of stomach and indigestion medicines, but with no definite results. He continued to have this chain of symptoms more or less until this present attack of acute appendicitis precipitated.

On my arrival to see him I advised immediate operation, but he would not consent until seven days later when an appendicial abscess had formed. Then operated and found an abscess which was well walled off. The patient made a rapid recovery and was able to leave the hospital in about two weeks.

Saw the patient a few days ago and he stated that he had been perfectly well since—no indigestion, and had not had an ache or pain. This acute attack of appendicitis with its accompanying operation seemed to have cured the chronic indigestion of eight or ten years' standing.

What we wish to impress is to be thorough in our histories and examinations of all chronic disturbances that we may be able to arrive at a true and definite diagnosis, and institute in time the proper treatment.

Delay is appalling when we realize that about 71 per cent. of gastric cancers were originally ulcers and the many end-complications of gall-stone disease, such as adhesion, duct-obstructions, perforations, infections with pancreatitis, and local conditions productive of malignancy; while in chronic appendicitis an acute attack is liable to burst forth at any time with all of its destructive and death-dealing results.

The tremendous responsibility of the proper care of this class of cases lies principally at the general practitioner's door, for it is to them the poor victims first go for help. Further, all honor and credit to the general practitioner who in time conscientiously does all in his power toward arriving at a true diagnosis and instituting the proper course of treatment. In doing

this we will many times save the expense of elixirs of lactated pepsin and other patent stomach specifics for indigestion, and relieve the unfortunate victim of years of untold suffering—of a miserable existence.

Pardon me for diversion, but of all classes of men for whom the uttermost contempt is engendered is the egotistic, gimlet-headed surgeon who usurps all the credit for results in the presence of patient and family at the expense of the conscientious and laboring general practitioner. He grabs the fee, but yet is not satisfied. For example, ask the patient who was operated on within the first twenty-four or thirty-six hours for acute appendicitis who was instrumental in saving his life, and he will tell you that Dr. Butcher told him that he pulled him out of the grave and that it was the worst case he ever saw and that he could not have lived two hours longer; while in reality it was the conscientious and well-trained judgment of the general practitioner in the background that directed the patient well, and that occasioned in a great part the brilliant results. May honor be placed where honor is due, and may both general practitioner and surgeon be honest with each other and to the patient, and work in harmony and conscientiously toward the restoration of suffering humanity to perfect physical womanhood and manhood.

REPORT OF A CASE OF PROGRESSIVE MUSCULAR DYSTROPHY—(PRIMARY MYOPATHY).*

By BENJAMIN EARL WASHBURN, M. A., M. D., University of Virginia.

Regarding the history of this disease, Dr. William G. Spiller, in Osler's *Modern Medicine*, says: "The various types of myopathy which at one time were regarded as distinct entities have been classed by Erb under one designation, and recognized as being merely varieties of one disease. Credit has been given to Duchenne as reporting the first case (1861), although at that early period he regarded its origin as central. Later he recognized its independence of the central nervous system. The muscular origin of the disease was demonstrated by Eulenburg, Cohnheim, and Charcot."

The majority of the cases of this disease that have been reported show only one or two of the

characteristic signs and symptoms, and typical cases are rare. The following one from the medical ward of the University of Virginia Hospital is interesting because it shows most of the important signs and symptoms ascribed to the affection.

The patient is a white boy, 11 years of age, and has spent all of his life in the Piedmont section of Virginia. He was admitted to the University of Virginia Hospital March 16, 1911, and was discharged April 22, 1911.

Family History: The patient's parents are living and in good health. He has three brothers and two sisters, all living and in good health. No brother or sister is dead. There is no history of tuberculosis, malignant disease, nervous trouble, syphilis, or rheumatism in the family. The father's habits are good and he never uses alcohol to excess.

Past History: The patient's general health has always been good. When a small child he had whooping-cough, but has never had any other of the diseases of childhood. He has never had pneumonia nor typhoid fever.

There is no history of headaches nor of any eye trouble. The patient has had several attacks of bronchitis with severe sore throat. The last attack of this nature occurred about two years ago. He has never had a chronic cough or any heart trouble. His appetite and digestion have always been good. He is never troubled with abdominal pains, and his bowels move regularly every other day. There is no history of convulsions of any kind, chorea, or any other nervous trouble. For the last two years the patient has steadily and rapidly increased in weight.

About one month ago the patient had some kind of bladder trouble. He would urinate at frequent intervals, but could not pass much urine at a time. This continued for about a week, when his mother gave him sweet spirits of nitre and the trouble was immediately relieved. There has been no other genito-urinary trouble.

Present Illness: The present condition began insidiously. The patient did not walk until he was about three years old. At that time his parents noticed that he was very clumsy and could not walk straight. As he grew older, because of his slow, awkward, waddling gait, he could not keep up with the other children when at play. This became marked about two years ago, when the patient became very weak in his

*The author wishes to acknowledge his indebtedness to Dr. John Staige Davis and to Dr. J. C. Flippin, of the medical service of the University of Virginia Hospital, for the privilege of reporting this case and for many helpful suggestions in regard to it.

back, shoulders, and arms, and since that time he has steadily grown fatter. His parents, fearing some spinal disease, brought the patient to the hospital in this condition.

Physical Examination: The patient is a well-developed and well-nourished boy. In making an examination of him his attitude while standing and his gait when walking first attract

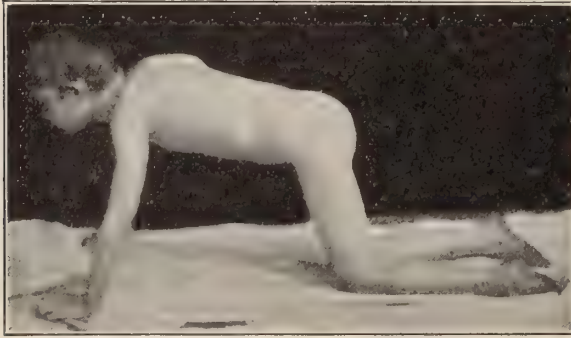


Fig. 1.

attention. He stands with his legs well apart (see Fig. 6[†]), the shoulders thrown back, the spine curved (lordosis and scoliosis being present); and the abdomen protruding. The scapulae stand out with much prominence. The weakness of the gluteal muscles causes a peculiar elevation of first one hip and then the other when the patient walks, causing his gait to be



Fig. 2.

awkward and waddling. When the patient is placed flat on his back and told to get up, he first turns over in the all-fours position and raises the trunk with his arms (Fig. 1); the hands are then moved along the floor (Fig. 2)

[†]The photographs accompanying this article were made by Dr. Hunter S. Woodbery, of the University of Virginia.

to the ankles and then up the legs until the knees are reached (Figs. 3 and 4); then



Fig. 3.

with one hand upon a knee he lifts himself up (Fig. 5), grasps the other knee, and gradually



Fig. 4.

pushes himself into the erect position (Fig. 6) by climbing up his legs.

Certain groups of the patient's muscles are enlarged and other groups are relatively atrophied. Pseudo-hypertrophy is particularly seen in the calf muscles (Fig. 6), the extensors of the legs, the glutei, and the lumbar muscles. The deltoid and triceps are only slightly enlarged. These pseudo-hypertrophied muscles stand out with prominence and form a striking contrast to the feebleness of the child. Though they appear strong, these muscles are in reality very weak, as may be determined by having the patient pull against your arm. Muscular wasting is seen in the muscles of the shoulder girdle, especially the latissimus dorsi, (Fig. 6), and those of the lower part of the trunk. When the patient is lifted by the axillae (Fig. 7), the shoulders are carried as far upwards as the tissues permit, and one gets an impression that the child

color and no ulcerations are present. The teeth are fairly good and the tongue is not coated. The muscles of the face and neck appear normal.

The glands of the neck are palpable, as are also the inguinal glands on the right side. The epitrochlear, left inguinal, and axillary glands are not palpable. The patient's penis and scrotum are very small in size and show lack of development. The cremasteric and plantar reflexes are present. No reflex movements are elicited by striking over the patellar tendons. The abdomen is protruding, but is soft on palpation, no masses being felt. The superficial



Fig. 5.

is slipping through. The patient's feet are of a peculiar shape, being short and club-like.

The head is normal in shape and the facial expression is that of a fairly intelligent boy. The eyes are equal in size and are symmetrical. The pupils react to light and accommodation. The mucous membrane of the mouth is of good



Fig. 6.

arteries—radial, brachial, temporal, and dorsalis pedis—are palpable. The radial pulse is rather fast, 112 beats per minute, but is of

good quality, and is regular in rate and rhythm. The heart is normal in size. The rate is fast, but the beats are regular, and no abnormal sounds are heard. The chest is well developed and the respiratory movements are full and equal on the two sides. Breath and voice sounds are normal. No râles are heard. The liver is not enlarged, and the spleen is not palpable.

Course of the Disease While the Patient Was in the Hospital: As to prognosis, Dr. Spiller says: "Muscular dystrophy is very chronic in its development, and not likely to cause death unless vital muscles become implicated. The afflicted person may, however, have diminished resistance to other diseases."



Fig. 7.

On March 28, after the patient had been in the hospital for twelve days, he began to complain of a headache and a sore throat, his temperature rising to 102.5 degrees. A blood examination at that time showed: Red cells, 4,560,000; white cells, 14,600; hemoglobin

(Sahli), 70 per cent. The differential count was as follows: Polymorphonuclears, 76 per cent.; small mononuclears, 18 per cent.; eosinophiles, 1.4 per cent.; transitional, .9 per cent.; large mononuclears, 3.3 per cent., and mast cells, .4 per cent. Urine examination was negative. The throat became worse, and the patient developed a severe cold and bronchitis. A dirty gray membrane formed over the right tonsil and spread to the uvula, the tonsils being much enlarged. The patient was isolated, the clinical signs and symptoms of a pharyngeal and laryngeal diphtheria being present, although repeated microscopic examinations failed to show the Klebs-Loeffler bacillus. Ten thousand units of diphtheria anti-toxin were administered in two doses and a complete cure resulted. On the 9th of April the patient was well enough to return to the ward. On the 19th of April a blood examination showed the white cells to be 10,000 and the hemoglobin to be 60 per cent. (Sahli).

Treatment: The usual treatment of massage, electricity, and exercise was tried, but the patient failed to show improvement and was dismissed April 22, 1911, after having been under observation for thirty-seven days.

TRACHEOTOMY—REPORT OF CASES.*

By O. A. M. McKIMMIE, M. D., Washington, D. C.

Notwithstanding the fact that intubation, upper bronchoscopy and antitoxin have narrowed the field of tracheotomy, there are still several conditions in which it is indicated, either as an operation of election or of necessity.

As an emergency procedure the urgency of the occasion frequently necessitates neglect of all aseptic and antiseptic measures; but when tracheotomy can be done with deliberation, it should be regarded as a major operation and an aseptic technique, perfect in every detail, carried out.

A nurse skilled in the care of such cases should be procured if possible, and a tube used of sufficient length to remain in the trachea after the reaction swelling of the overlying tissues has taken place.

If it is impossible to procure a nurse trained in this special work, the surgeon should remain with the patient until he has fully in-

*Read before the Southern Section of the American Laryngological, Rhinological and Otological Society, at Lynchburg, Va. Jan. 21, 1911.

structed the nurse in attendance and feels sure that she fully understands her duties.

I have found it very difficult to procure suitable length tubes, those commonly sold being entirely too short. They are apt to be pulled out of the tracheal wound by the swelling of the neck tissues, so that, while the end is apparently in the trachea, it is in reality without it; and even if air passes through it, it does not directly enter the trachea, but is forced out and in the slit in the trachea and the patient does not get sufficient air.

The after-care of tracheotomized patients is fully as important as the operation itself, and many cases are lost because of ignorance on the part of the attendant.

If the tube has to be worn for any length of time, it is almost impossible to prevent infection of the overlying tissues, as the secretions from the open surfaces and the secretions coughed out of the trachea are excellent culture media for pathogenic organisms, but frequent change of dressings, both of the gauze pad under the tube flanges, the moist gauze over the tube mouth and the large piece of gauze covering the whole dressing, will minimize the danger.

The question of room temperature, supply of moisture and proper air supply are so well understood that I shall not discuss them.

I have found that aluminum tubes are much more comfortable to the patient, are much more easily cleansed and corrode less rapidly than those of any other material.

Cleansing of the inner tube should be done as often as mucus collects, no matter how frequently. An important part of the nurse's training consists in learning the sound made by air passing through a tube which is becoming obstructed.

Under ordinary circumstances the outer tube should be taken out only by the surgeon, and should be returned as soon as possible after removal, inasmuch as the filling of the granulating tissues with blood, when the tube pressure is removed, may so narrow the aperture as to render re-introduction difficult or even dangerous. On this account it is advisable to have at hand a tube of smaller calibre to meet such an emergency.

One experience has convinced me that the nurse should be trained in the removal, cleansing and re-introduction of the outer tube in an emergency.

The outer tube should not be removed unnecessarily, as changing the gauze and wiping the wound will serve to keep the tissues clean. Under ordinary circumstances once in three days is sufficient.

When the operation can be done deliberately, the patient should be in the Trendelenberg position with the neck extended, thus favoring the expulsion of blood or secretions by the force of gravity.

A general anaesthetic should be omitted and local anaesthesia produced by infiltration or ethyl chloride freezing. The one permissible exception to this rule is in the case of tracheotomy for foreign body, or lower bronchoscopy for the same.

The importance of avoiding general anaesthesia and the reasons therefor have been set forth most forcibly by our President, Chevalier Jackson, in his paper read before the Eastern Section of this Society, in Philadelphia, in 1909. Hurried tracheotomies result in all sorts of incisions. I have seen some so badly placed as to make the retention of a tube well-nigh impossible.

I am convinced that when an emergency demands opening of the air duct it can be done more safely through the cricothyroid space than in any other location. One stroke of the knife divides the tissues from half an inch above the space to three-quarters of an inch below it. In this location there are practically no vessels of a size to cause troublesome bleeding, and the next step can be proceeded with at once. It consists in cutting the cricothyroid membrane in a horizontal direction, hugging the upper border of the cricoid cartilage and then turning the edge of the knife downward and cutting outward through the cricoid and upper tracheal rings.

The demand for this operation may arise when neither instruments, tubes, or assistants are at hand, and the surgeon has perhaps only a pocket knife with which to work. Under such circumstances he may have to use all his ingenuity to devise some means of keeping the trachea open until a suitable tube can be obtained.

If nothing better offers he may have to depend on dilatation with his finger until assistance arrives.

REPORT OF CASES.

Case I.—R. B., aged eleven years, was brought to the hospital at 11 o'clock at night, after a journey of forty miles. While playing Indians that afternoon he and his playmates had parched some corn. While eating it he had suddenly laughed and inspired a large grain. The immediate symptoms were alarming, but after a time he was able to breathe fairly well at intervals. Two physicians in the little town where he was visiting were summoned, but were unable to do anything to relieve him.

It was seven hours before a train to Washington was available, and when I saw him the grain of corn had been riding up and down, and with its sharp point rasping the lining of his trachea for about ten hours.

His respiration was variable. At times when the foreign body remained in one position for a while he could breathe with moderate comfort, and then when it began its excursions again, he would cough violently and quickly become cyanosed.

I was preparing to operate on a patient with double mastoiditis, whom I had just seen in consultation and brought to the hospital for immediate operation, when this boy was brought in. The resident physician asked me to see him at once.

Laryngoscopic examination revealed the foreign body presenting edge-wise in a transverse position immediately below the vocal cords.

I thought I could remove it with a pair of laryngeal forceps. While the nurse was getting them, the patient inspired deeply, again dislodging the grain of corn, coughed violently and became partially cyanosed.

I turned him head downward and tried to cause expulsion of the corn by striking him forcibly on the back. This manoeuvre failed to accomplish anything, so I had him removed to the operating room and prepared for a tracheotomy.

There were no bronchoscopic instruments at the hospital, and the patient's condition was such that I did not deem it wise to delay while they were sent for.

When placed on the table his respiration seemed better, and I considered it safe to use a little chloroform. Everything went smoothly until the trachea was exposed and I was ready to open it. All bleeding had been stopped, and

I took up the knife to make the tracheal incision. Just at this moment he coughed once, immediately stopped breathing and turned blue. At the same time a small vein broke loose and flooded the field. I wiped the blood away with my thumb, turned the edge of my knife upward and opened the trachea with a stab in its middle third. Oxygen and artificial respiration soon restored his breathing and the bleeding was easily controlled.

The grain of corn was found in the larynx and presented one of its flat sides against the under surface of the cords, thus completely blocking the larynx and accounting for the sudden cessation of respiration.

Inasmuch as the grain of corn had a very sharp point and had been performing its excursions from the larynx to the bifurcation of the trachea for so many hours, I deemed it wise to use a tube, and did so, leaving it in for about 34 hours. After its removal the wound was dressed with sterile gauze and adhesive straps. The patient made an uneventful recovery.

Case II.—C. P., aged 30 years, was sent into the hospital by his family physician because of obstructed breathing and asthma. When first seen the patient presented a typical picture of spasmodic asthma which had been present for more than a week. Expiration seemed much more difficult than inspiration, and was accompanied by a stridor suggestive of laryngeal obstruction. It seemed as if a valve opposed the passage of the air outward.

Laryngoscopic examination revealed no obstruction in the larynx and owing to the patient's labored breathing, it was impossible to obtain a view of the deeper part of the trachea. On the day following his admission, I saw him about two o'clock in the afternoon when his breathing seemed decidedly easier, but still was more difficult in expiration than in inspiration. About four o'clock I was hurriedly summoned and found him unconscious, partly cyanosed and breathing with great difficulty.

After hurried consultation with two of my colleagues of the hospital staff, I did a low tracheotomy and put in a tube. The operation was done deliberately and without anæsthesia of any kind. The patient breathed somewhat better after the trachea was opened, but never regained consciousness and died about five hours later. I was unable to get a post-mortem and cannot state the actual cause of death.

The family physician told me that this patient had had syphilis.

A recent paper by Dr. Horn, of San Francisco, on the bronchoscopic examination of patients with asthma *during the attack* suggests a possible explanation of the breathing presented by this patient. In this paper he describes a condition resembling a very dense œdema which almost closed the bronchi during the paroxysms.

Case III.—Mr. N., aged 49. Incurable carcinoma of the larynx. When first seen, after careful explanation of the respective merits of tracheotomy, laryngectomy and laryngotomy, he chose the last.

This case I expect to report in detail at a later date.

The primary operation was laryngotomy, with removal by the sub-perichondral method of Dr. Charles W. Richardson, of the whole of the interior of the left side of the larynx including the arytenoid process and the immensely swollen ary-epiglottic fold. From this operation the patient made a rapid and eminently satisfactory recovery and was able to be about much improved in general condition and in his breathing.

He later developed œdema of the right side of the larynx and again entered the hospital. For several days he improved; then suddenly one night his breathing became rapidly worse and when I reached him I found him struggling for breath and only able to whisper "hurry."

While the resident got me a knife, I placed him in a Morris chair with a pillow back of his shoulders. By this time he was getting very blue and no anæsthetic was required. I cut rapidly down on the crico-thyroid space and put in the first tube which came to hand and which proved entirely too small for permanent wear. When he began to breathe and recovered consciousness, I put him in a suitable sized tube. This patient lived about four months after this last operation and then died peacefully, so far as respiration was concerned, of exhaustion from the extension of his cancer.

Earlier in these remarks, I referred to an occurrence which made me think it advisable to consider teaching my nurses how to take out and re-introduce the outer tube. I was hurriedly summoned to the bedside of the last mentioned patient one afternoon because his breathing was so labored and the nurse could find no obstruction in the inner tube.

By this time he had been wearing his tube about two and a half months, and his neck about it was one mass of cancer. I feared that the growth was extending below the end of the tube, but when I removed it I found a hard crust of dried mucus and blood which fitted over the end of the outer tube like a thimble and completely obstructed it.

For some time prior to its removal the only air he had been getting was what sucked in along the sides of the outer tube. This condition did not recur. This is the only case in which I have seen such an obstruction.

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GERM DISEASES—ANALOGY OF, NATURE'S MEANS OF CURE, BACTERIOLOGY, ETC., SPECIFIC TREATMENT—CASES REPORTED.*

By H. E. JONES, M. D., Roanoke, Va.

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All germ diseases are analogous: first, in their effects upon the system; second, in that they are bacteremias; third, in that the common effect of all is toxemia; fourth, in that hyperleukocytosis of some variety, actual or relative, is common to all; fifth, in that the phagocytic and antitoxic function of the blood is nature's means of cure; sixth, in that the indications to be met and the curative treatment are the same. Nine-tenths of every physician's and surgeon's practice is the result of germ infection. The different germs and their toxins, produce their respective characteristic effects and phases, giving rise to their respective named diseases, all of which have symptoms and pathological lesions in common.

The differential diagnosis can be made only by their respective pathognomonic differential symptoms, and the presence in the blood of their characteristic bacteria. The most important indication to be met in the management of these diseases is destruction of the bacteria and prevention when the opportunity is found.

Intelligent and rational treatment is clearly indicated by two of nature's methods of cure—that is, the germicidal and antitoxic powers of the blood. Any means that will increase and aid these powers is the remedy *par excellence* to be administered in the great war between the leukocytes and the bacterial invasion; "fig-

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uratively speaking, the result will depend upon the number of organisms engaged in the warfare." The warfare against germs by nature and man, to be effectual, must be combined and most strenuously conducted. Combining the mortality rate of all germ diseases and striking an average, we will find that nature alone, and unaided, will cure about 88 per cent., leaving a mortality rate of 12 per cent. If this mortality rate is to be lowered, it is to be done with our assistance to nature with specific and certain weapons. We know from literature that the phagocytic action of the leukocytes resists the action or kills the bacteria, the antitoxic properties of the blood antagonize the toxins, either physiologically or chemically or both. When these two methods (phagocytic and antitoxic) of the blood fail to conquer the invading army, it is due, not to the means, but to the overwhelming number of bacteria and the great quantity of toxins manufactured.

The specific remedies for the germ diseases are mercury, arsenical preparations and serums. Any preparation of mercury is germicidal, the most potent preparation is bichloride, which is the one to be used in severe infections.

Why is mercury, or its most potent preparation, the remedy *par excellence*? First, from observation and experimentation, as well as literature on the subject, we know that it is the most powerful local and systemic germicide and antiseptic. Second, it increases leukocytosis when absorbed into the blood. Third, it is a physiological and chemical antidote to germ toxins. Fourth, it is my belief that it increases the opsonic index of the blood. "Opsonin designates certain substances present in the blood serum which render various highly virulent bacteria subject to phagocytosis"—that is, there are bacteria so powerful and resistant to the phagocytic action of the leukocytes, that it is necessary for them to be crippled or weakened by some substance in the blood, whether manufactured naturally or introduced artificially, that will aid the leukocytes in producing effectual phagocytic action and destruction of the bacteria. Various serums and drugs will do this. Fifth, it increases the immunity and resistance of the blood to germ infection. Sixth, it increases cell nutrition, vigor and development of the blood and tissues. Seventh, in weak solutions it destroys or retards the development of lower forms of life (germs), in the blood and tis-

ues, but it increases the number and regenerates the higher forms of life (blood and tissue cells), and makes them energetic and more resistant. Eighth, it prevents round cell proliferation, and when proliferated destroys the cells which are the pabulum of most germs, especially those of syphilis, tuberculosis, cancer, and many inflammatory infections. Ninth, it checks and stays degenerative changes, and prevents complications. Tenth, it increases elimination through lymphatics, intestinal glands and kidneys. Eleventh, it promotes metabolism. Twelfth, it is a cathartic and diuretic, and in full doses a purgative. Thirteenth, it is a vasomotor constrictor—relieves local congestion and inflammation. Fourteenth, it is hematonic—in small doses it increases the number of red and white cells. Fifteenth, it is diffusible and is absorbed by all of the cells of the body. Sixteenth, it is rapidly eliminated. Seventeenth, it promotes absorption of all inflammatory deposits, granulomata, hyperplasia, etc., of germ diseases, and is as much of a specific in other germ diseases as it is in syphilis. Eighteenth, it will kill any species of plant or animal life, and it will likewise kill any species of germs. It will kill or check the development of the germs of typhoid fever, pneumonia, diphtheria, tuberculosis, cholera, dysentery, malaria, scarlet fever, etc., just as easily and more quickly than it will those of syphilis. If such is the case, is there any logical reason why we should not use it as a systemic germicide, and therefore as a specific agent in the treatment of all germ diseases?

In any germ disease the main object is to prevent germ development and to destroy those already developed, and antagonize the toxins. When we shall have accomplished this, our efforts will be crowned with success. When the infection is severe, inject a full dose of bichloride—for an adult, from one-half to one grain for the first injection. This will be rapidly absorbed, quickly making a poor soil of the blood and tissues for germ development. The germs will be crippled and weakened, opsonized, and they will offer less resistance to nature's efforts. Hyperleukocytosis will be increased, a greater number of phagocytes will be developed to destroy the germs, and the antitoxic action of the blood will be increased to neutralize the toxins.

A few hours after the first hypodermic dose, give one-sixteenth grain bichloride by the

mouth every two hours and give one-eighth, one-fourth or one-half grain hypodermically (size dose depending upon age and size of patient and severity of infection), once a day until from three to eight injections are given. As soon as full physiological effects are observed, reduce the dose and lengthen the intervals, so that the physiological effects will be continued but not increased.

For bowel and kidney elimination give 5, 10, 15, 20 or 30 grains of calomel (dose depending on age and size of patient, degree of fermentation, constipation and toxemia), followed in four to six hours with oil or saline. The calomel can be given every second or third day (usually at night), as it is indicated. Usually in from five to twelve days the acute diseases of short duration will be under control or cured. In those of longer duration, for example tuberculosis and syphilis, the heroic treatment will have to be periodically repeated (with interval of rest and tonic treatment between), until they are cured. From recent literature and observation, practically all such cases will be cured, especially when the treatment is commenced early in the disease.

The pathology of syphilis, tuberculosis, cancer, leprosy, glanders, etc., is practically analogous, i. e., round cell epitheloid and giant cell infiltration is characteristic of all of them, and may attack any tissue of the body. "So little does the tissue-type vary in these different diseases, that it is difficult, if not impossible, to distinguish them by microscopic sections of the unstained tissues; just as in those unstained for bacteria, to which class of lesions they belong." They all produce granulation tissue (gummata), each variety of tissue producing its characteristic granulomata. The gummata, though sharply circumscribed, may take the form of diffuse infiltration of the affected parts and vary greatly in size—from that of a pin's point to a hen's egg. Usually firm, they may be soft and tend to form ulcers. "Coagulation-necrosis due to local anemia occurs in the center, and the periphery is converted into fibrous tissue" (Simon).

Hyperleukocytosis occurs in all of the conditions named as a defensive effort on the part of nature to effect a cure. The blood serum's function is antitoxic.

The above plainly shows to my mind that the ultimate effects on the human organism of bacteria of these diseases and their toxins are the

same, i. e., disintegration and disorganization of the blood, and of the most delicate as well as the firmest textures of the body. With such close resemblance of germ diseases to syphilis, is it not logical to conclude that the specific remedy for syphilis is the specific remedy for them also? Many different observers make this claim. From observation, experience and literature it is my firm conviction that they are correct in their conclusions.

CASES REPORTED.

A number of these cases are taken and reported for convenience from former articles by me on germ diseases, as they illustrate ideas to be conveyed.

Three months ago a case of syphilis of ten years' duration came to me for treatment. He was emaciated, anemic and weak, with no appetite. The syphilitic ulcerations of his throat, tonsils and pharynx, faucial pillars, soft palate, posterior nares, were horrible to look at; most of the structures mentioned were either partly or completely destroyed, with the tissues beneath still ulcerating. He had been treated at various times by three different physicians, and had spent six months at the Hot Springs. A throat specialist treated him for several months with local applications and large doses of iodide of potassium, with no benefit. The patient informed me that he had taken mercury off and on ever since he had contracted the disease, but it did not cure him.

My conclusion was that he needed a few large doses hypodermically. In ten days I gave him three one grain doses, five days apart; each dose was dissolved in one drachm of distilled water and injected into hip in four different points, three inches apart. Ten days from the first dose his lesions were healed and general condition improved; there was no salivation. Following these three large doses, I gave him one-fourth grain hypodermically once a week for four weeks. I then put him on mixed treatment, one-sixteenth grain bichloride and five grains of iodide of potassium, t. i. d. I advised him to keep it up with an occasional rest, of two or three days, for several months. I discharged the case with instructions to return if lesions returned.

I report this case to show that small doses of mercury continued for a long time were not effectual, and that a few large doses given hypodermically were effectual and gave relief. It is possible that I gave him larger doses than

were necessary, possibly one-half grain doses would have relieved him. In acute cases and chronic cases of moderate severity, I give one-fourth and one-half grain doses once or twice a week hypodermically, and one-sixteenth grain doses by mouth, *t. i. d.*, until full physiological effects; then the mercury is left off and the iodides in full doses are given for eight or ten days, when the mercury is resumed.

I have treated successfully three cases of pulmonary tuberculosis with mercury, and one case of tubercular meningitis; in the latter case—a patient aged two years—I gave nineteen injections, eighteen one-fourth grain doses, the nineteenth dose one-eighth grain. I have also successfully treated one case of tetanus.

In the last three years, I have treated 90 or more cases of typhoid with bichloride and calomel, without a death. In severe cases bichloride was administered hypodermically in doses ranging from one-fourth to one grain, giving from three to eight injections (though not more than two one-grain doses). In the mild cases it was administered by mouth, and ointment—twenty-five per cent. oleate of mercury—to the abdomen. From the beginning of treatment, in about seventy-five per cent. of the cases the temperature reached normal on the 7th, 8th or 9th day; in twenty-five per cent. of the cases the temperature reached normal on the 7th, 8th or 9th day in the forenoon, running with an evening temperature not higher than 100 degrees until the 12th day. Convalescence was rapid with complete recovery. I have treated successfully about forty cases of the summer intestinal diseases of children (cholera infantum, ileo-colitis, dysentery, etc.), with no death, as well as some twelve or fifteen cases of dysentery in adults. I have treated all infectious and contagious diseases of childhood and of adults for two years or more with mercury as a specific agent, with uniform success when the cases were secured in the first and middle stages of the disease.

I report two illustrative cases of typhoid to show the apparent specific action of mercury in the treatment of that disease.

August 3rd, 1908, I was called to see Mrs. H., age 26, and son, age 5 years, both ill and occupying the same bed. On my first visit they had been confined to the bed four days. Both patients had all of the classical clinical symptoms of the disease, mother's temperature

104 degrees, son's temperature 105 degrees. Specific treatment was commenced August 3rd. In seven days, the 10th, the temperature of both had dropped to normal and remained normal from that date. Convalescence was rapid and no complications.

Dr. S. J. Gill believes that calomel in 10, 20 or 30 grain doses given every other night, is a specific for typhoid fever. In fifteen years he has treated 150 cases, with one death—surely a low death rate. Dr. S. I. Conduff, Hollins, Va., believes 40 grain doses of calomel (four ten grain capsules, one given every hour until all are taken), is a specific in pneumonia—when the drug is given in the first 12 to 48 hours. He says you will accomplish with it in twelve to thirty-six hours what you would accomplish with the old line of treatment (if patient lived), in from 7 to 10 days. There is no salivation with these doses—the effect is germicidal, cathartic and sedative. Dr. G. W. Drake, of Hollins, Va., believes mercury is a systemic germicide and has specific effects in a number of germ diseases. In a yellow fever epidemic he used calomel with success, giving it in 60 grain doses. Dr. Henry Alfred Robbins, of Washington, D. C., uses mercury and the iodides in germ diseases other than syphilis. Dr. Illingsworth, of Cincinnati, believes iodide of mercury is a specific in infectious and contagious diseases. Dr. N. B. Shade treated tuberculosis with mercury and advocated its use for that disease 15 years ago. "He suffered the fate of an innovator and brought his ideas forward a decade too soon." Dr. B. L. Wright, Las Animas, Colo., used mercury as a specific in tuberculosis, from his recent reports, with wonderful success. Dr. Jemma used bichloride in typhoid, rheumatism, erysipelas, and tuberculosis. Dr. Poncell used it with success in cancerous tumors. Dr. Luss used it with success in the treatment of sarcomata, carcinomata, pneumonia, and tuberculosis. Dr. Celli used it with success in tetanus. Drs. Rennert and Graham used bichloride in diphtheria. Dr. Loranchet used it successfully in typhoid fever—21 cases, no deaths—says it controls toxic and all severe symptoms. Dr. Leslie L. Schwab, of Roanoke, treated 19 cases of typhoid, 1909-1910, no deaths—fever lasted in over half of the cases not longer than 7 to 9 days, others from 9 to 12—used treatment recommended in this and former papers. Dr. Thomas H. Manley uses it in tubercular glands.

Drs. Daily, Short, and L. B. Godfrey use mercury in the treatment of diphtheria. Dr. J. C. Burks, of Roanoke, Va., has successfully treated 25 cases of typhoid with mercury (in 6 cases used bichloride and 19 cases used iodide of mercury—results same as I have reported in this and former papers).

I report a case of complicated malaria; Mr. S., diagnosis chronic malaria (contracted in Cuba) complicated with ascites, and hypertrophic cirrhosis of liver and spleen, anemia and emaciation. He was tapped three times for the ascites and given usual remedies (quinine, iron, arsenic and salines), which did not relieve him. He was treated with mercury and the iodides, and was cured in less than three months.

Degenerative diseases, senile prostatitis, purpura and eczema are usually relieved with bichloride or iodide of mercury. In senility, where all of the organs are inactive and the

not retain anything, scarcely water, so I concluded to administer the mercury hypodermically. On June 13th, 14th, 15th, 16th, 17th, 18th, and 19th I gave her one-fourth grain each day, injected into hip. The temperature dropped from 103 degrees on the 13th to $102\frac{1}{2}$ degrees on the 14th, from $102\frac{1}{2}$ degrees on the 15th to $101\frac{1}{2}$ degrees on the 16th, 101 degrees on the 17th, $100\frac{1}{2}$ degrees on the 18th, 100 degrees on the 19th, 99 degrees on the 20th, $98\frac{1}{2}$ degrees on the 21st, 99 degrees on the 22nd, 97 degrees on the 23d, $98\frac{1}{2}$ degrees on the 24th, $98\frac{3}{8}$ degrees on the 25th. Twenty-five per cent. ointment of oleate of mercury was applied to the abdomen twice a day; rapid convalescence and complete recovery.

CASE No. 2—Miss C. M., aged 17 years. June 22d, temperature $103\frac{1}{2}$ degrees and delirious, abdomen distended, a number of rose eruptions. I injected into hip 7-16 of a grain

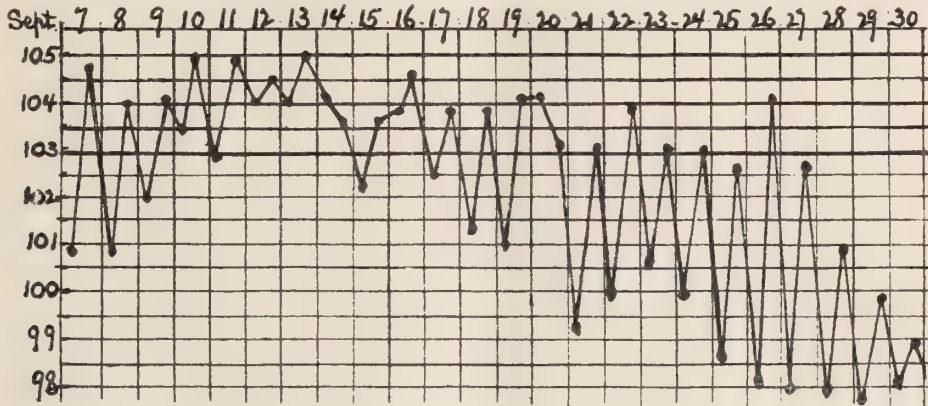


Chart No. 1—From Text-Book for Comparison.

functions are below par, small doses of bichloride or the iodide of mercury, given once or twice a day for a week or ten days with a rest off of three or four days, gives relief and tones up the aged when all else fails. In a number of cases I have treated I have witnessed marked changes for the better, and in several they have become strong enough to resume their occupations. Nutrition, metabolism, weight and strength were greatly improved.

I will report three cases of typhoid fever treated during June and July, 1908, with bichloride administered hypodermically.

CASE No. 1—On the afternoon of June 13th I was called to see Miss P., aged 21. Temperature was 103 degrees; she was suffering with nausea and could

not retain anything, scarcely water, so I concluded to administer the mercury hypodermically. On June 13th, 14th, 15th, 16th, 17th, 18th, and 19th I gave her one-fourth grain each day, injected into hip. The temperature dropped from 103 degrees on the 13th to $102\frac{1}{2}$ degrees on the 14th, from $102\frac{1}{2}$ degrees on the 15th to $101\frac{1}{2}$ degrees on the 16th, 101 degrees on the 17th, $100\frac{1}{2}$ degrees on the 18th, 100 degrees on the 19th, 99 degrees on the 20th, $98\frac{1}{2}$ degrees on the 21st, 99 degrees on the 22nd, 97 degrees on the 23d, $98\frac{1}{2}$ degrees on the 24th, $98\frac{3}{8}$ degrees on the 25th. Twenty-five per cent. ointment of oleate of mercury was applied to the abdomen twice a day; rapid convalescence and complete recovery.

CASE No. 3—Mrs. D., aged 67 years. June 27th, patient delirious, temperature 105 degrees in the afternoon. Injected 7-16 grain bichloride into hip; 28th, morning temperature 100 degrees, afternoon temperature 104 $\frac{3}{4}$

a step-like descent, again reaching a normal temperature on the 41st day. (See Osler, 4th edition, page 15, fever chart of typhoid fever with relapse). Note the difference and make the comparison in the range of temperature

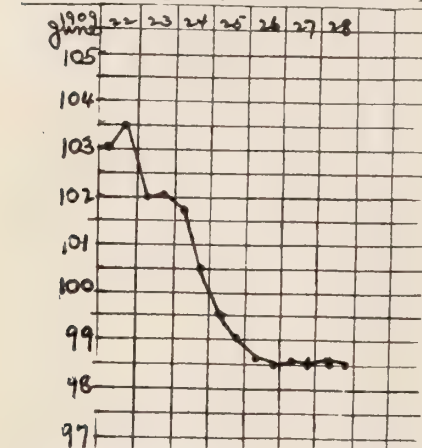


Chart No. 2—Miss C. M., Aged 17. Positive Serum Reaction for Typhoid Treated with HgCl₂.

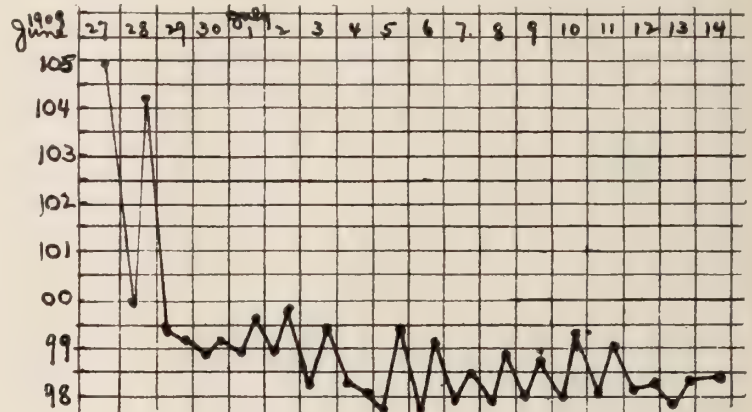


Chart No. 3—Mrs. D., Age 67. Positive Serum Reaction for Typhoid. Treated with HgCl₂.

degrees, injected three-fourths grain; 29th, temperature 100 degrees, injected one-fourth grain; 30th, temperature 99 $\frac{1}{2}$ degrees, injected one-fourth grain; July 1st, temperature 99 $\frac{1}{2}$ degrees, no injection; 2d, temperature, 99 $\frac{1}{2}$ degrees, injected one-fourth grain; 3d, temperature 99 degrees, injected one-fourth grain; 4th, temperature 99 degrees; 5th, temperature 99 degrees; 6th, temperature 98 $\frac{3}{4}$ degrees; 7th, 98 $\frac{3}{4}$ degrees; 8th, 99 degrees; 9th, 98 $\frac{3}{4}$ degrees; 10th, 99 degrees; 11th, 98 $\frac{3}{4}$ degrees; 12th, 98 $\frac{3}{4}$ degrees; 13th, 97 $\frac{3}{4}$ degrees; 14th, 98 $\frac{3}{4}$ degrees. No injection after July 3d. From that date I gave her 1-16 grain per mouth three times a day; no ointment was used. Complete and rapid recovery. This case also received fifteen grains of calomel the night of June 27th, followed the next day with a saline, and also on the night of July 1st fifteen grains.

You will observe that in all the cases treated with mercury the temperature dropped downward practically from day to day until it reached normal in from six to eight days. You will also observe that in the old line of treatment where mercury is not used as the specific agent there is an upward step-like curve until the 18th day, and then a downward step-like curve from the 18th day to 23d day, and then a practically normal temperature for two or three days, when there may be a relapse, with a second upward curve, reaching a temperature of 105 degrees on the 31st day, with

and its duration in this chart of Dr. Osler's and the temperature of the cases reported. You will see from the above cases that the results are decidedly in favor of the mercury treatment. I have noticed this marked difference in the range of the temperature curve and in the duration of the fever in all of the ninety or more cases of typhoid fever treated with mercury as the specific agent.

Let us see how mercury does this: First, in full doses, it is a germicide; in medium and small doses it antagonizes the toxins, prevents degeneration of the blood, increases leukocytosis and produces polycythemia, *i. e.*, an increased number of red cells. In typhoid, after the first days, we have produced by the toxins just the opposite of this condition, *i. e.*, hypoleukocytosis is produced, reduction of the leukocytes and anis hypocytosis—*i. e.*, destruction of leukocytes and defective formation of new cells—and oligocythemia, *i. e.*, a diminished production of red cells. This condition produces what is known as toxicogenic anemia. "Generally speaking, the increase in the number of leukocytes in the acute and infectious diseases is directly proportionate to the intensity of the infection and the power of resistance on the part of the individual," but in typhoid fever and tuberculosis, except for the first few days, this is not the case as with most other germ diseases, especially "When the virulence of the infection is speci-

ally intense and an absolute increase of the total number of leukocytes may not take place, although a relative increase of the polynuclear neutrophilic elements will probably always be observed. Absence of hypoleukocytosis will usually warrant a fatal prognosis." (Simon.)

We have seen from the first part of this paper in which I gave the effects of mercury on the blood that the mercury will prevent this condition in typhoid fever and other germ diseases, hence it is rational and logical to use the drug in the treatment of typhoid fever.

At Rebekah Sanitarium for a period of fourteen months there have been no deaths, neither of medical nor surgical cases. Nearly all of the cases were treated with mercury and other drugs and means found necessary. All severe cases, especially septic cases operated on, were prepared with mercury and treated with it afterwards, from a few days to a week or more. We operated on a septic case of appendicitis, with gangrenous and sloughing appendix, ruptured abscess, and general septic peritonitis. We expected this case to die in from twelve to seventy-two hours. Belly was opened and drained with gauze and glass tubes. One grain of bichloride was injected into hip before

four days. He was given half ounce sulphate of magnesia each day. His temperature—103 degrees at time of operation—dropped to normal the next day and remained around 98 degrees and 100½ degrees until the tenth day, when it reached normal and remained so. He

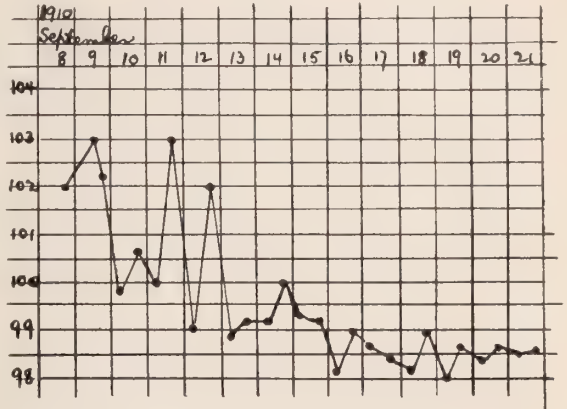


Chart No. 5—B. W. S., Age 11 Years. Positive Serum Reaction for Typhoid. Treated with $HgCl_2$.

made a prompt and uninterrupted recovery and was up and walking about his room in fourteen days.

I mention this case to show the efficiency of bichloride in severe infection in surgical cases. In mild infections, the large doses are not given. In the severe infections from one to three large doses are given, followed with small doses for as long a time as is found necessary.

Given hypodermically, bichloride in one-fourth, one-half, three-fourths, and one-grain doses may appear heroic and dangerous to most physicians who have had no experience with it in germ diseases other than syphilis. In infections other than syphilis the patients are just as tolerant of mercury as those infected with syphilis. Two cases that attempted suicide took seven and a half grains of bichloride, which was absorbed, and they recovered. A lady in this city who took by mistake 180 grains of calomel had no ill effects. She had three copious semi-solid stools and one stool of about four ounces of liquid bile; there was no salivation and the patient was none the worse for taking such a dose. A thirty-five pound dog that was given seven and one-half grains of bichloride to kill it was ill two days and recovered from its effects; in a few weeks it recovered from its supposed incurable disease.

Surely if patients are not killed by these doses, the doses recommended in this paper will not injure the patients.

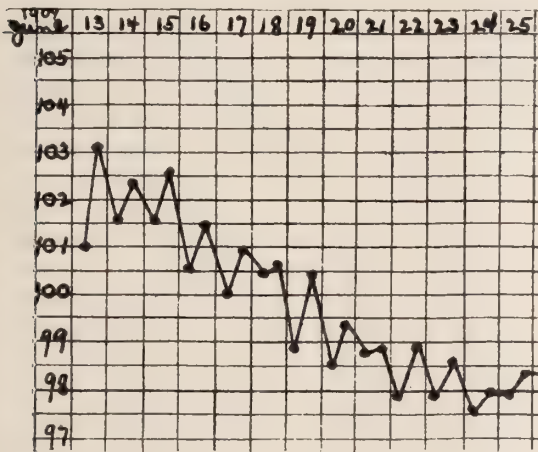


Chart No. 4—Miss W. P., Age 17. Positive Serum Reaction for Typhoid. Treated with $HgCl_2$.

removing the case from the operating table. Patient was put to bed on right side and head of bed raised sixteen inches to facilitate drainage by gravity. Next day he was given ten grains of calomel, followed in six hours with saline. For four days he was given 1-16 grain bichloride by mouth every two or three hours; at the end of this time he was given one-half grain of red iodide of mercury twice a day for

To those who are timid and conservative I would advise the use of one-sixteenth, one-eighth or one-fourth-grain doses, frequently repeated in acute severe infections, given either hypodermically or by mouth, and I venture to say the results will be surprising.

For twenty-five years the science of diagnosis has advanced with leaps and bounds, and the majority of the profession is satisfied after the diagnosis is made with apparent complacent neglect of therapeutics. During this diagnostic period very little has been accomplished in the scientific advancement of physiology of drugs and their therapeutic application; hence the scientific practical application of remedies, scientifically discovered, to diseases are very few.

It is necessary for the general practitioner, as well as the specialist, if he is human and desires to cure his patients, to have a specific remedy that will give certain results. The time is now at hand for the laboratory to devote its

straighten out our heterogenous mass of numerous ineffectual remedies for every disease and find for us new scientific remedies.

If such remedies come from such a source the medical world as a whole will adopt and practically apply them, but the profession as a whole will not accept unscientific observations on therapeutics made by a few pioneers on account of skepticism, conservatism, passivity and tradition; they must have scientific proof; therefore let us go to work. Passivity without action, without assertion, makes for nothing; tradition is against change,—the individual who is faithful to it is afraid to leave the old and cut out new roads; conservatism is a defect,—it is for order, contentment and stability, but it is against progress. If results cannot be gotten at by the practical application of logic and science, we will have to get at them by intuition, energy, perseverance, investigation, and the experiments of ourselves and others. To do this we must be active and assertive in a measure unfaithful to tradition and conservatism; we must be willing to progress by change even at the expense of order, stability and contentment. There is no progress without change and discontent; we must accept the new for the old when it is for the best; we must not be satisfied with the old and present methods of treatment accepted generally by the profession; we must be dissatisfied and discontented with it if we wish to advance in our art and benefit humanity more than we have in the past.

The ideas advanced in this article are not the result of scientific investigation; they were not gained and proven by chemical (synthetical, physiological, and analytical) laboratory investigation and experimentation; they were gained from observation at the bedside with practical application of the drug, and from literature. If the facts are true and the drug will do what is claimed, it will be a great boon to humanity and is worth investigation by the scientific members of the profession. It could be easily carried out in the larger schools and universities that possess means and hospital facilities, where there is plenty of clinical material besides the laboratory and chemical facilities for investigation and experimentation.

If the therapeutic epoch is at hand, and scientific laboratory experimentations and research work are to be conducted on the therapeutic and physiological action of drugs, in health and dis-

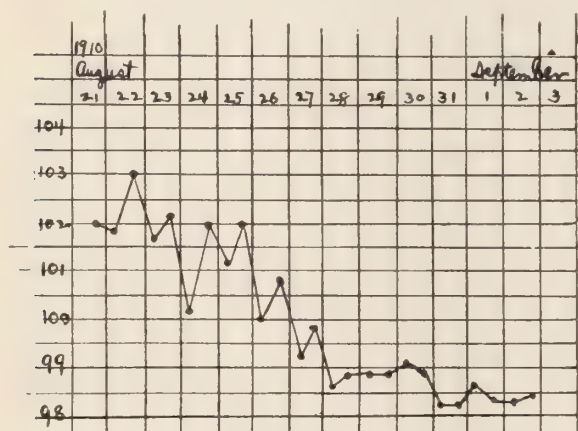


Chart No. 6—D. L. A., Age 12 Years 9 Months. Positive Serum Reaction for Typhoid. Treated with $HgCl_2$.

attention to therapeutics and discover by experimental research work practical specific remedies to be used in the cure of diseases scientifically diagnosed. Another says, "In looking over the past twenty-five years it would seem as though therapeutics had been neglected by the students of our profession. Diagnosis is not the epitome of the healing art, and were I a prophet I would not hesitate to say that we are now on the eve of a therapeutic epoch, when treatment will receive the attention of the medical world." It is up to the scientific investigators to pay attention to therapeutics and

ease, it is to be hoped (at least by a few of us) that the therapeutic effects of mercury on germ diseases other than syphilis will not be neglected. The report of the result from such a source, whether corroborative or not, will be of great benefit to the profession and to humanity.

Dr. Wm. Osler in his seventh revised edition, 1910, devotes 312 pages to the "Specific Infectious and Contagious Diseases"—germ diseases—forty-four in number, which include a list of all known germ diseases, medical and surgical. He says: "The three years that have passed since the last edition have been rich in addition to our knowledge of disease and its treatment, particularly in connection with the acute infections. One cannot but be impressed with the extraordinary rapidity of the progress of our knowledge of acute infections. The new points which have come up in treatment have been discussed, particularly the important advances in serum therapy and on the surgical treatment of internal diseases."

From this you will see that there are no important advances made in specific or germicidal therapy. If you will look over these 312 pages devoted to germ diseases—the treatment of eight of which is ignored entirely—you will find the treatment is not directed to the real cause of the disease, *i. e.*, to the destruction of the respective bacilli of each disease with the exception of syphilis, which is the only one treated with direct systemic germicides. There are a few other diseases, about four, I believe, treated with serum, namely, diphtheria, tetanus, cerebro-spinal meningitis, septicemia and preventive serum for typhoid. This treatment may be considered specific, as it aims at the destruction of the bacilli through the serum of the blood. These five diseases, treated specifically, are also very properly treated from a hygienic, dietetic, tonic, and symptomatic point of view, which is the only way the rest of the forty-four diseases included in the list of the specific infections are treated. It seems to me that they also, being germ diseases, should be treated with a germicide.

The specific remedies for syphilis, one of the most dreadful of germ diseases, are mercury and the germicidal arsenical preparations, *viz.*, atoxyl and arseno-benzol (dioxydiaminoarseno-benzol). The use of these powerful arsenical preparations in syphilis has been giving marvelous results in the treatment of that disease. It is claimed that spirochetes disappear from

chancres and condylomata in a few hours, and that the disease itself is cured in from a week to ten days. The arsenical preparations seem to be much more powerful and quicker in their effects on the germs of syphilis than mercury, and will supercede the latter drug in treatment of this disease in the near future if the statement above in regard to them is proven true by practical application to the disease in man, which will be the final test.

It may be that they will prove as destructive to the germs of other diseases. It is to be hoped that they will when the treatment of germ diseases will be settled and fixed, if it is not already fixed, by the use of mercury as a systemic germicide. However, it might be worth our while to use these preparations in the treatment of germ diseases, as it is stated that arsenic combined with mercury is a most successful treatment for severe cases of syphilis. No doubt this may be true in severe infections of other germ diseases, as arsenic is known to be a valuable remedy in the treatment of all diseases. If you were to treat a case of syphilis (a specific infection) hygienically and symptomatically alone, dispensing with the germicidal treatment as thirty-nine of the other specific infections are treated, would it be cured? No, a thousand times, no. In time a patient would practically rot before death ensued. Would such a treatment lessen the mortality of the disease? No, it would help the patient to resist it, and it would lengthen life for a short time, but death would surely come in time. The average natural mortality of all germ diseases so treated, as nearly as I can estimate it, is about 12 per cent.

The only possible way for us to lower this mortality rate is to attack the chief cause of each disease with a germicide, "a medicinal product acting within the organism causing the complete destruction of the pathogenic agents of each disease." I think this is the logical procedure. Dr. Wm. Welch, of Baltimore, says: "Observation and experiment are the warp and woof of the fabric of scientific medicine, the one as necessary as the other. While we know, as all men of science must know, that there can be no dogma, principle, system or method universally applicable to the treatment of disease, we are aware that new knowledge may come from the most unpromising sources, and we are eager to discover what good there

may be in the claims of the advocates of any peculiar system of treatment; and if such is found, there is nothing whatever in our principles to prevent us from adopting it, or, in fact, from employing any method of cure which the physician may deem best. We have no intention or desire to interfere, even if we could, with the freedom of the individual to employ anyone or any method of healing he may please, so long as the interest of the public health is not endangered thereby."

So you see, we—a body of men educated in the fundamental branches, as well as in the higher and practical branches of medicine and surgery—are in a position individually, and have the right to reason logically for ourselves, and not follow supinely the orthodox method of the text. We should apply any remedy we may find to give results, whether suggested by results obtained in our own practice or that of some one else, even though it is not used generally by the whole profession for the purpose for which it is recommended. It is the profound duty of the practical members of this profession to be thinkers, leaders, observers, and experimenters, as well as it is the duty of the scientific members. It is imperative that we be both followers and path-finders—following in the footsteps of our honored predecessors and present day colleagues and putting into use the best of the accumulated knowledge of each past generation of medicine—path-finders by whatever means we may find at hand, in the sense of being thinkers, observers, inventors, originators, experimenters, and discoverers of better and more effectual remedies, new or old, for the relief and cure of suffering humanity. Mercury is an old tool in the hands of the profession, and has been doing good service for generations.

I have found it to be an old remedy with what might be termed a new and wider field of application in the treatment of germ diseases other than syphilis. I have also found by repeated trial, observation, and experimentation that it can be given without injury in doses from six to twelve times greater than is authorized by the text, or that is known generally by the profession, and this statement is especially applicable to the preparation, bichloride. This old remedy, with new application, in intelligent hands will play havoc with all germ life, and will revolutionize the treatment of all germ diseases. It will be the means of saving an-

nually countless numbers of human lives and countless dollars of expense.

As an example of the germ diseases, let us see about typhoid fever. It is estimated that from 50,000 to 70,000 typhoid patients out of some 700,000 or 800,000 cases die annually in the United States. Now, with my experience and honest belief, which sounds extravagant and revolutionary, I make the statement that with the use of this remedy in the first and middle stages of typhoid it is not necessary for any case of the disease to die. The mortality rate will be nil, and fifty to seventy thousand deaths will be yearly avoided. "Without therapeutics the physician is only a useless naturalist, passing his life in classifying and depicting the maladies of man. It is therapeutics that solaces and cures, that elevates and ennobles our art; by it alone this art may become a science" with results and values for the future that are incalculable. Therefore let us be not only naturalists, but therapeutists, with weapons to solace and to heal any and all diseases—90 per cent. of which are germ diseases.

Of the last ten or twelve cases of typhoid fever treated with mercury I secured positive serum reaction for typhoid fever through the State Laboratory (examinations made by Dr. Meade Ferguson, bacteriologist) for the purpose of making positive and unquestionable a diagnosis in these cases. The results of the treatment of these cases with bichloride were the same as those given above with cases clinically diagnosed for the last three years, and reported in former articles in the *Virginia Medical Semi-Monthly*.

INTERNAL PODALIC VERSION—ITS TECHNIQUE AND INDICATIONS.*

By E. B. CLAYBROOK, M. D., Cumberland, Md.
Surgeon Alleghany Hospital, B. and O. R. R., and
Western Maryland Railway.

In taking up this subject, I do so knowing that my views in the matter may be regarded as heresy, from the standpoint of those who are prone to follow literature or precedent implicitly. But I have always felt that, if we are to be bound to the chariot wheel of convention, progress would be slow in every line, and more so in the practice of medicine, as in medicine the theory of to-day is often the accepted fact of to-morrow.

In works on obstetrics, the technique of podalic version is given practically as follows: Use

*Read before the Cumberland Academy of Medicine, Cumberland, Md., April 5, 1911.

the hand, the palmar surface of which will correspond to the abdomen of the child; introduce the hand, pushing the head aside, if it is down, until it rests on the brim of the true pelvis; then find and grasp the anterior foot; while traction is made on the foot to bring the buttock down, the other hand on the outside "Pushes the head up towards the fundus." As soon as the buttock is down, the case is left to nature until the umbilicus is born—the posterior leg being left folded to increase the size of the buttock and act as a dilator. As soon as the umbilicus appears delivery must be rapid.

The fallacies in the accepted method are:

1. That the hand should only go far enough to reach the foot, as any further introduction would increase the chance of infection. If the hand is clean, you "Can go as far as you like" without danger of infection. If it is not clean, an inch inside of the womb is as bad as a foot, and the womb will be infected anyway.

2. The outside hand "pushes the head up toward the fundus." Those who have seen and done this often can say just how much the head is pushed up by the external hand. As soon as you make deep enough pressure to start the head, the handling brings on a contraction and the head does not go up.

3. The head not going up, rests on the edge of the false pelvis and acts as a pivot; the buttock being pulled upon strongly crowds the whole body of the child down into the lowest segment of the womb where version takes place in a narrow confined space, and since the uterine walls of this area are apt to be thin, there is grave danger of rupture of the womb, as the oft reiterated warnings of writers amply testify.

4. *The folded leg as a slow dilator.*—The hips and legs are not much larger than the hips alone, and, as delivery is to be rapid when the shoulders and head come, I can see no reason to wait on nature for the hips and allow the woman to come out of the anesthetic, when full anesthesia at the last stage is a great safeguard to the life of the child, if not of the mother.

For the past four years I have been performing podalic version by a different method, with so much greater ease and comfort to myself and such uniform safety for the mother and child, that I take this opportunity of calling attention to it.

In the first place, use whichever hand you can use best, regardless of the position of the child. Boldly enter the womb with the whole hand; if the cervix is not thoroughly dilated, use digital dilatation until the hand will enter; then close the fist in the cervix after which spread the thumb away from the fingers. I have never seen a case where the head would not follow through a cervix so treated.

Next, grasp the head firmly and carry it in the hand directly and completely to the fundus of the womb, as you do so the version takes place in the wide fundus where the walls are thick and there is practically no danger of rupture—as you bring the hand back, grasp the feet, both feet, which have now dropped to the lowest segment of the womb, and bring them on out and deliver rapidly. Why leave the buttocks to nature when it is necessary to do rapid work on the head and shoulders, and the cervix is already sufficiently open? This procedure is easy, safe and in my hands has been so satisfactory as to the results to mother and child that I use it more and more and forceps less.

I have never seen a case of infection follow, though I have never douched the womb as some of the books advise, "whenever the hand has been introduced inside."

I have done manual dilatation in a seven-months primipara, not in labor, but in convulsions and delivered a live child in ten minutes.

Now, as to indications—text books give placenta previa, moderate contraction of the conjugate, transverse position, and conditions which require rapid delivery of the child. To these I would add, brow and face presentations, persistent posterior positions and any condition calling for high forceps unless the head was in exceptionally good position for forceps application, for high forceps is an operation not to be undertaken lightly as it is fraught with much danger to both mother and child unless in skilled hands.

Text books teach that a positive contra-indication, is the engagement of the head in the pelvis. Under complete anesthesia it is as easy in a case with the head in the pelvis, as above the brim, provided the point of the chin has not escaped the lip of the cervix or can be re-engaged in the cervix. I have done this on a case where forceps had been applied ineffectually by another physician and the head was showing at the vulva, without the least trou-

ble, and in a very short time, without laceration of the perineum, the patient being a primipara.

Now as to the danger of the delivery of the after coming head—I sincerely believe that the constant din as to rapid delivery of these cases has done harm, and that frantic efforts at rapid delivery have caused many deaths by injury to the cord or medulla rather than to strangulation. The delivery should be rapid, but there is no need for the frantic efforts often seen. It should be done with due regard to the mechanism of labor and carefully done with not too much traction on the shoulders or the feet. The traction may well be applied with the finger in the mouth with moderate traction by the feet or shoulders, if there is need of more, forceps to the after coming head are not hard to apply, and are very efficient, but will be very seldom needed.

61 Washington Street.

DIFFERENTIAL DIAGNOSIS IN ABDOMINAL INJURIES IN RAILWAY SURGERY.*

By SPARRELL S. GALE, M. D., Roanoke, Va.

Surgeon to Lewis-Gale Hospital.

This subject reminds me of the man who wrote an essay on "Snakes in Ireland." He began by saying there are no snakes in Ireland. So it is with this subject; there is no positive differential diagnosis in abdominal injuries in railway accidents.

However, because there are no hard and fast rules to enable us to make such diagnoses, I feel that we can all be benefited if we study this subject together.

In the first place, it is of the utmost importance to get an accurate history of how the accident was received. For instance, if a man is caught between cars while making a coupling, and is squeezed through the body between the bumpers, in such cases, nearly invariably in my experience, he has sustained a more or less serious abdominal or thoracic injury. I can best illustrate this by a case or two:

A yard brakeman, in attempting to make a coupling between two cars not equipped with automatic couplers, was caught between the bumpers, and severely squeezed through the body. A hasty examination revealed no visible external signs of injury, but it was evident that

this man was severely injured internally, all the signs of shock and internal hemorrhage being apparent. He died in a short time, before he could be removed to a hospital.

Autopsy showed a ruptured liver, besides several feet of intestine torn loose from its mesenteric attachment, with several ruptures in the intestine, and with the abdomen full of blood, death being due to internal hemorrhage.

After seeing a number of such cases, not all of whom died, I have come to the conclusion that in all cases where the man is squeezed between cars, as when making a coupling, that an exploratory laparotomy is indicated, whether the patient shows any marked signs of shock or internal abdominal injury or not.

This is illustrated by the following cases: Colored brakeman caught between cars in similar manner to case just cited. A careful examination, made shortly afterwards, showed no signs of external injury, nor of internal injury beyond abdominal rigidity and some abdominal pains. Pulse not accelerated, temperature normal. The patient kept under observation in the hospital. Rigidity and abdominal tenderness increased, distension and vomiting developed, pulse and temperature went up gradually.

This man in 24 hours showed unmistakable signs of serious internal abdominal injury. An operation was decided on, but had to be postponed for several hours on account of unavoidable circumstances. Patient died on the operating table while going under anesthetic. An autopsy was then made and showed about three feet of the small intestine torn loose from the mesenteric attachment, with internal hemorrhage. Had an exploratory laparotomy been made before it became apparent that serious internal injury was present, a resection of the injured bowel might have saved his life.

The following case, with a more fortunate termination, illustrates well the importance of exploratory laparotomy. A colored brakeman was injured exactly in the same way as the two cases just cited. This man showed no shock, or internal or external signs of injury, except some abdominal rigidity and pain. Bearing in mind the two previous cases, an exploratory operation was made. A median abdominal incision from pubes to umbilicus revealed the following: Abdominal cavity partly filled with fresh blood; a careful inspection of intestines showed three holes, peritoneum stripped off cæcum with in-

*Read before the Association of Surgeons of Norfolk and Western Railway at its fourth annual session, at Richmond, Va., June 15-16, 1911.

jury to appendix, a tear in the peritoneum and fascia covering the abdominal aorta and vena-cava just above the promontory of the sacrum for a distance of two and one-half inches, through which you could hook your finger around the great abdominal vessels. These injuries were repaired and the patient made an uninterrupted recovery.

The history of these cases indicates clearly to my mind the importance of getting an accurate history of how the patient was hurt, and, where they have been pinched or squeezed as these men were between cars. The only way to make an accurate diagnosis is to make an early exploratory laparotomy. Of course, I am assuming the patient can be treated in a hospital.

In other words, the differential diagnosis of severe abdominal railroad injuries is impossible. We have no way of finding out what organs, or to what extent any given organ is injured except by looking inside.

The rule in this class of cases is very similar to appendicitis cases. Operate on all your cases early and a great many will be saved that would otherwise be lost, if you wait for unmistakable signs of internal abdominal injury to develop.

A STATE SANITARIUM FOR OUR DRUG HABITUÉS.*

By A. B. GRUBB, M. D., Cripple Creek, Va.

Inasmuch as our Society has always stood for better medical laws, I believe a paper of this kind will not be out of place at this meeting. Probably every physician knows of some drug habitué who ought to be cured and who really would like to be cured, but the patient finds himself such a slave to the habit that his efforts at reform are futile.

There are, however, a few of them, when awakened to their condition by the entreaties of friends, who will walk into a private hospital and apply for treatment. This paper is intended for the larger class who will not by all the entreaties of family and friends attempt to cross the ever-widening and deepening gulf. For these hopeless cases Virginia should have a sanitarium regulated by State laws and State officers.

Authority should be given our judges and magistrates to summons a board of two phy-

sicians, and on their judgment, commit these cases to the sanitarium, where they will be placed under the absolute jurisdiction of the physician and nurses, and where they will have to remain until cured or dismissed by the chief.

While attending the clinics at the Virginia Penitentiary, I saw a convict who was taking 30 grains of morphine every day when committed. We had the advantage of him, and rapidly withdrew the drug, despite his lamentations, and in a few weeks he was cured and removed from the hospital ward to his cell to begin his sentence to hard labor. Such treatment as this should be given every narcomanic within our borders and it is only possible through the instrument of the powerful hand of the Law.

Many morphine habitués have at sometime suffered pain from renal and gall-stone colic, surgical tuberculosis and other conditions easily removed by surgery. Many of them have been heavy literary workers and, finding themselves broken in health, have taken morphine to produce sleep.

In the first instance, the surgical cause should be removed by a competent surgeon. For this reason, the sanitarium should be situated so that a competent surgeon could be easily called. For the care-worn brain-worker, mental rest and other treatment should be given by a competent internist.

I trust that our Society will unite to influence our legislators to the need of such an institution, with authority to commit cases as was stated above. In doing so, we can easily appreciate that many difficulties are in the way. First, many of our law-makers are so imbued with the idea of Jeffersonian Democracy, that, to their minds, taking a man from his home by force of law because he chooses to use a certain narcotic is an infringement on his personal liberty. To that we can answer, "a slave to a habit should be made a servant to the law." They would pawn their wife's last decent dress for the drug, and one Chinaman even mortgaged his mother, sold his wife and bargained his mother-in-law to obtain more of the drug. They are a menace to a community and often have held up druggists and physicians at the point of a gun demanding their sedative. To them, personal liberty is a non-entity and "they have passed beyond the pale of moral or religious effort."

Second, the extra expense to the State may be

*Read by title before the Southwest Virginia Medical Society, at Bristol, Va., December 15-16, 1910.

offered as a difficulty in the way. But an industrial department may be run in connection with the sanitarium and healthful work be given the patients, thus greatly curtailing the expense to the State and, perhaps, even making it a self-supporting place. Besides, no expense of our Commonwealth is too great which offers one ray of hope to the home cursed by a narcomaniac and promises to restore him to manhood. There was a time when the epileptic and insane were treated as though they contained seven devils "exceeding fierce so that no man might pass that way."

The time was when the prisoner convict was thrown into a foul smelling dungeon to be its spoil. But in this, the twentieth century, the insane are cared for in an asylum and epileptics are taken care of in their colony. The convict has healthful quarters and rough but wholesome food, and is made cognizant of the fact that he still has a soul. In fact, throughout all our Commonwealth the value of the man down in the maelstrom of despair is rising, ever rising.

Analyses, Selections, Etc.

Railway Sanitation.

Surgeon C. P. Wertenbaker, of the United States Public Health and Marine Hospital Service, stationed at Norfolk, Va., who was detailed by Surgeon-General Wyman to deliver a special address on Railway Sanitation before the Association of Surgeons of the Norfolk and Western Railway, meeting at Richmond, Va., June 15-16, said his object in addressing the Association was to arouse the interest of the members in the subject of sanitation and enlist their active aid to health officers in public health work.

He pointed out the great advantage it would be to the railroads and the country if railway surgeons, being a part of a great railway system, accustomed to its organization and discipline, would turn their attention to sanitation in general, and especially on railroads. He said if the surgeons of all the railways would help to correct unsanitary conditions that came under their notice, the benefits to the country would be tremendous.

Railroads play an important part in the spread of disease because they facilitate travel

between distant points, and also because they carry flies, mosquitoes and other insects, and in this way help to spread malaria, yellow fever, typhoid fever, and other diseases.

It was stated that there is great need for improvement in the sanitary condition of railway stations, especially in the smaller places. These stations should be kept clean. They should be swept at least once daily, and when not occupied by passengers. The floors should be sprinkled with a disinfecting solution before being swept. Toilet accommodations should be provided, and the toilets kept clean. Waiting rooms should be ventilated, and the common drinking cup at water coolers abolished, and the public advised to carry individual drinking cups.

The pollution of the road-bed from toilets on trains was condemned, as it tended, to scatter diseases, and is probably responsible for some of the mysterious outbreaks of typhoid fever that sometimes occur. It was recommended that receptacles be put under the toilets of the trains to catch the discharges so they could ultimately be thrown into a sewer or burned.

The ventilation of cars was discussed, and the speaker thought that over-heating, dust and smoke did more to produce disease than any other condition found on cars. He recommends sprinkling the road-bed with oil to keep down the dust, and said when electricity replaced steam as a motive power, as seems probable, the smoke nuisance would be abated.

The feather duster and "whisk" broom of the porter were condemned as unsanitary, as they only removed dust from one place and scattered it over the passengers in another. The use of a vacuum cleaner for removing dust from the clothing of passengers, and from the interior of the car, was advocated. Such a cleaner could be operated by the dynamo that furnishes electric lights for the train, or by power generated from the moving wheels of the train itself.

Basins holding water for washing on cars were declared unsanitary and should be abolished, and the washing done from a stream of water that would immediately run-off after being used. The present arrangement on cars could easily be changed to accomplish this result by removing the plugs from the basins so that they would not hold water, and by delivering the water for washing from a pipe that discharged some little distance above the basin,

the passenger catching the water in the hands as it falls.

The speaker said it is impossible to keep public basins clean and sanitary under present conditions. Many passengers will spit in them when brushing the teeth, a practice that is disgusting in the extreme, and dangerous to other passengers if the person spitting has tuberculosis or other transmissible disease. While dental cuspidors for use when brushing the teeth have appeared in some cars, it is not possible to force all passengers to use them, therefore the only effective way to prevent contamination of the basins is to prevent water being retained in them for washing.

It was recommended that kitchens on dining cars be screened to keep out flies and protect the food from infection. It was said that the danger to passengers is real, from cooks, waiters and porters suffering from tuberculosis, and other diseases that he named. A careful monthly inspection of all employees in these cars would afford the necessary protection.

The hope was expressed that the time was not far distant when all places serving food to the public, not only on common carriers like railroads, passenger vessels, etc., but in hotels, restaurants, and eating places generally would be subject to frequent sanitary inspections. The absurdity of having a food inspector for markets was pointed out, unless this inspection was followed up by an inspection of the food as it was served the public.

It was stated that some of the progressive eating houses, recognizing the demand for improved sanitary surroundings in the care, preparation and service of food, are requesting the health officers to make inspections of their places for the purpose of giving a certificate that the food there is properly stored, cooked and served, and the place clean and sanitary and free from flies, etc.

When the public has been educated to the point of requiring such a certificate before patronizing an eating place, there will be a great improvement in the food served the public.

For the railroad that first gives special attention to sanitation in all its departments, and properly advertises this fact to the public, there awaits great pecuniary reward, predicts the speaker. The public generally is awakening to the necessity for improved sanitation along all lines, and the railroad that first caters to this demand will reap the benefit. Sooner or

later all railroads will be forced by public sentiment to adopt similar measures.

Surgeon Wertenbaker in closing predicted that the time would come when all the great corporations, manufacturing establishments, and even individual business men would find it to their interest to co-operate with the health authorities in improving sanitary conditions as a matter of self-protection. "Health," he said, "is the greatest asset that an individual or a nation can have, and sanitation is its foundation stone."

The Mosquito As a Sanitary Problem.

In an address by Dr. Edward A. Ayers, of Branchville, N. J., before the Medical Society of New Jersey, June 13-15, 1911, the speaker said the mosquito problem no longer waits upon the researches of entomologists, protozoologists, or pathologists for information necessary in eradicating homomositic diseases. There is still much to learn of the four diseases known to be caused by mosquitoes, of malaria, filariasis, yellow fever and dengue, of possibly others of mosquito origin, and much to complete our knowledge of mosquitoes; but the problem of control of mosquito diseases in man is solely one of civil engineering, of energy and determination on the part of government and public organizations in applying the data already gathered by medical and allied scientists. Federal control of bacteric, bacillic, and protozoic diseases in man has been more effective in its territorial possessions than at home, because foreign sanitary measures are exercised by an undivided military organization, but at home through divided and distributed Federal, state, local and non-political organizations, which lessen efficiency and also have potential commercial interests to overcome. Similarly, State and local efforts in mosquito eradication are more effective in outlying than in borough and city districts. For this reason it is easier to eradicate 80 per cent. than the remaining 20 per cent. of mosquitoes. The influence of the undestroyed 20 per cent. on the public mind is more potent than that due to the destroyed 80 per cent. Complete extermination in fairly populated districts is quite possible within reasonable cost, and usually self-paying through increased realty values. In territories presenting arduous drainage propositions, like the Mississippi bayou districts and Florida swamp-lands, the union of reclamation with sanitary

interests makes permanent treatment financially reasonable, and necessarily a Federal or State undertaking. It is politically as justifiable as Federal work in irrigation, and hygienically far more worthy and needful. The address, fully illustrated, described the life history of mosquitoes, the homomositic diseases, which now include dengue, and practical methods of mosquito eradication in town, country, and wild lands.

Book Notices.

A Manual of Diseases of the Nose, Throat, and Ear. By E. BALDWIN GLEASON, M. D., Professor of Otology, Medico-Chirurgical College, Philadelphia. Second Revised Edition. 12mo.; 563 pages. Illustrated. Philadelphia and London: W. B. Saunders Company. 1910. Flexible Leather, \$2.50 net.

The second edition of Dr. Gleason's manual, which was written to supply students and general practitioners with the essential facts concerning diseases of the nose, throat and ear, is a thorough revision of the first, eliminations to the extent of about sixty pages having been made, while here and there are probably equally as many interpolations of new matter. The book commends itself for the plain, practical and authoritative manner in which the various subjects are discussed, for the numerous illustrations, a most helpful formulary of 45 pages, and, incidentally, for the flexible leather binding which makes the volume easy to handle.

Hydrotherapy: A Treatise on Hydrotherapy in General; Its Application to Special Affections; the Technic or Processes Employed, and Use of Waters Internally. By GUY HINSDALE, A. M., M. D., Lecturer on Climatology, Medico-Chirurgical College of Philadelphia. 8vo.; 466 pages. Illustrated. Philadelphia and London: W. B. Saunders Company. 1910. Cloth, \$3.50 net.

Hydrotherapy is one of the things about which the average practicing physician knows far less than he is willing to admit. The fact is, but few medical schools seem to consider the subject worthy of more than the most superficial attention. One is surprised to note the multitudinous uses made of water in the treatment of disease, and the more we read, the more convinced are we that many of the measures suggested are valuable therapeutically, and have been neglected chiefly through a fail-

ure to appreciate their true worth. The book under consideration deals with hydrotherapy from every standpoint, and has sections on general hydrotherapy, special hydrotherapy, technic, the use of mineral waters internally, prescriptions of hydrotherapy, and an appendix. The text has 145 illustrations, and apparently but little, if anything, is left unsaid that ought to be said in a work of this kind.

Principles of Therapeutics. By A. MANQUAT, National Correspondent to the Académie de Médecine. Translated by M. SIMBAD GABRIEL, M. D. New York and London: D. Appleton & Co. 1910. 8 vo.; 298 pages. Cloth, \$3 net.

Undoubtedly there is a field for a good *Principles of Therapeutics*; we confess, however, to a sense of disappointment in going over the present volume. Many of the long discussions, especially of minor questions, could have been stated more briefly, and without requiring the same fatiguing effort on the part of the reader. While portions of the book are fairly satisfactory, there seems to be but little that is new, and on the whole, we should judge there will not be great demand for its sale.

Treatment of Disease—A Manual of Practical Medicine. By REYNOLD WEBB WILCOX, M. A., M. D., LL. D., Professor of Medicine (Retired), N. Y. Post-Graduate Medical School and Hospital; Ex-President American Therapeutic Society; President of Medical Association of Greater City of New York; Formerly Vice-Chairman Revision Committee, U. S. Pharmacopeia, etc. Third Edition, Thoroughly Revised and Enlarged. Philadelphia: P. Blakiston's Son & Co. 1911. 8vo.; 1023 pages. Cloth. Price, \$7.50 net.

The Treatment of Disease is really nothing less than a most excellent book on the practice of medicine, every medical phase of a disease being discussed—definition, etiology, pathology, symptoms, etc., as well as treatment—though if special stress is given any one side of a subject it is that of therapeutics. In this latter respect, details of drug administration, dosage (English and metric), interval suggested for repeating same, etc., are usually given, and it is refreshing to note how thoroughly matters of this sort are treated—matters that are so important for the successful management of a case, yet so often dismissed by most authors as if everyone ought to know. Time-honored drugs and prescriptions that have proved useful are not cast aside, unless new ones promise better results. Ailments, like hemorrhoids, fre-

quently met with receive their full measure of consideration from the medical stand-point, and surgical intervention is here resorted to only when medicinal treatment fails. This third edition, which is thoroughly indexed, should prove of inestimable service to the general practitioner.

Editorial.

Just to Call Attention to the Bill for a National Department of Health.

Present Federal legislation, regulations and rulings affecting the practice of medicine, prevention of disease, quarantine, sanitation, hygiene, etc., stop short of the manifest want of the times. There is too much of the "tacked-on" method among the Government bureaus doing health work. Over-lapping and duplication of the work existing health agencies are doing is the marked peculiarity of the present system; and this same fault stamps the Mann-Martin bill now before Congress. This Mann-Martin bill is an evasion—nothing more, nothing less. If passed it will be devoid of force and utilization. It is much like picking up a stone and putting it down in another place and then taking it back and dropping it in the place where it was originally found. It is true this moving the stone is doing something, and the world is inclined to think that "doing something" is doing well, but in this case it does not change the past, present or future conditions of the lot in which it was handled. A bill is needed that is concerned with modern advance in medicine and in line with the advance of knowledge that has taken place. Present-day facts bear out the need of progress in national legislation.

What is the Mann-Martin bill? It says: "To change the name of the Public Health and Marine-Hospital Service, to increase the pay of officers of said service and for other purposes." The "other purposes" provide for the Public Health and Marine-Hospital Service to "study and investigate the diseases of man." Why give to this service a power it already possesses? What is needed to check the waste in human lives in this country is co-ordination among the Government bureaus doing health work. There are, perhaps, enough of health agencies at work now. They simply lack the effective-

ness that comes from co-ordination, and this lack of effectiveness can only be overcome by administrative supervision in one department. Support the Owen bill for a National Department of Health. Senator Owen's bill provides for the establishment of a National Department of Health by co-ordinating the Government's existing health agencies. If the Mann-Martin bill is passed, any real public health legislation will be put off for a number of years. This is the history of national legislation.

At a certain time during Sherman's raid through Georgia the Federals met an old negro, who, as the ending shows, was a Southern sympathizer. An officer asked the old man if he knew where the Rebels were, and if they were advancing. He studied a moment and then said, "They is 'vancin' backwards." Each day there are three million sick persons in this country. Surely they do not favor health legislation that "advances backwards"—nor even like the stone—changed here and changed there, but making no change for the better.

A healthy man is a Government asset. A healthy man is a producer. The more producers, the stronger the Government.

Every doctor should urge his congressmen and senators to support the Owen bill. Write Senator Owen for a copy of his bill. It is worth the trouble.

American Medical Association.

At the meeting in Los Angeles, June 26-30, Atlantic City, N. J., was named as the place for the sixty-third annual meeting, with the following officers:—President, Dr. Abraham Jacobi, New York City; vice-presidents, Drs. W. Jarvis Barlow, Los Angeles, Cal., Floyd W. McRae, Atlanta, Ga., William R. Tipton, East Las Vegas, N. M., William T. Wright, Denison, Ia.; secretary, Dr. Alexander R. Craig, Philadelphia, Pa., treasurer, Dr. William Allen Pusey, Chicago, Ill., trustees, Drs. Philip Marvel, Atlantic City, N. J., Philip Mills Jones, San Francisco, Cal., and Frank W. Searles, New Lenox, Ill.

The election by the House of Delegates of Dr. Jacobi, as President of the Association is a most fitting tribute to a worthy man. Eminent and beloved as physician and professor, he has been the preceptor of many who, following in his foot-steps, have also written their names

in the "Book of Fame." The Association and profession have honored themselves in honoring him.

Smallpox in the United States.

Assistant Surgeon General John W. Trask, in recent numbers of Public Health Reports, gives an interesting compilation of smallpox in this country, with a discussion as to its prevalence and geographic distribution during 1909 and 1910. Complete reports were not obtainable from all States. He expresses the opinion that the disease would naturally spread more rapidly where reports were not promptly made, as Health authorities in such sections were probably without authority to enforce natural precautions.

He calls attention to the extreme mildness and low mortality rate of the disease in our States as compared with rates reported from foreign countries. As some of these countries are probably better protected by vaccination than the United States, it is as yet an open question as to whether the mildness of the disease among our people is due to "a less virulent strain of infection." In this case, the probable cause of the severe cases is that the virulent infection is brought in from some foreign or more violently infected locality, or that the mild form, under given conditions, becomes more severe. This problem can only be solved by a more careful report of all cases with a record of the salient points in each case.

Mississippi Valley Medical Association.

Preliminary announcement has been made of the thirty-seventh annual meeting of this Association to be held in Nashville, Tenn., October 17-19, 1911, with headquarters at the Hermitage Hotel. Dr. John A. Witherspoon, chairman of the local committee of arrangements, is planning excellent entertainment for the members and guests of the Association.

Though blind, the president, Dr. Robert H. Babcock, of Chicago, who has achieved great distinction as an author, will preside over the general meetings. The vice-presidents, Dr. Charles E. Barnett, Ft. Wayne, Ind., and Dr. Arthur D. Holmes, Detroit, Mich., will preside over the sections on Medicine and Surgery. In addition to the address of the president, two other addresses, which will be of special in-

terest to the public as well as the profession, are those in Medicine and Surgery by Drs. J. C. Wilson, of Philadelphia, and Jos. D. Bryant, of New York.

Dr. Henry Enos Tuley, Louisville, Ky., is secretary.

The Medical Society of the State of North Carolina,

At its meeting in Charlotte, June 20-22, elected the following officers for its next annual session, which will be held in Hendersonville: President, Dr. A. A. Kent, Lenoir; vice-presidents, Drs. J. P. Munroe, Charlotte; W. P. Horton, North Wilkesboro; J. G. Murphy, Wilmington; secretary, Dr. D. A. Stanton, High Point; treasurer, Dr. H. D. Walker, Elizabeth City; essayist, Dr. R. N. Duffey, Newbern; orator, Dr. John H. Tucker, Charlotte; leader of debate, Dr. M. E. Street, Glendale.

Delegates appointed to the next meeting of the Medical Society of Virginia, October 24-27, 1911, are Drs. J. W. Long, Greensboro; M. Bolton, Rich Square, and F. M. Register, Tillery.

The North Carolina Board of Health

Held its regular meeting in connection with the recent meeting of the Medical Society of the State of North Carolina, and elected Drs. Chas. J. O'H. Laughinghouse, of Greenville, and Thos. E. Anderson, of Statesville, members of the Board for full terms, to be effective at once.

Dr. J. Howell Way, of Waynesville, who has just received his re-appointment from Governor Kitchin for another six year term, was elected President of the Board for this term at the Charlotte meeting. Dr. Way, who is an enthusiastic worker and deservedly popular, has been honored many times by the profession of his own State, besides being an ex-secretary of, and, at this time, President of the Tri-State Medical Association of the Carolinas and Virginia.

Southwest Virginia Medical Association.

There was a large attendance and a number of new members were received at the nineteenth semi-annual meeting of this Association in Roanoke, Va., June 20-21, 1911, and an exceedingly interesting program was presented. The principal feature of the program was a "Symposium on Exophthalmic Goitre," by Drs.

Geo. B. Lawson, R. L. Rhodes and H. H. Trout, which was generally discussed.

The election of officers followed the reading of papers, and resulted as follows: President, Dr. W. W. Chaffin, Pulaski; vice-presidents, Drs. E. C. Watson, Roanoke; W. H. Ribble, Jr., Wytheville; and secretary-treasurer, Dr. A. B. Greiner, Rural Retreat (re-elected). The next meeting will be held in December.

The Shenandoah County (Va.) Medical Society

Held its regular meeting in Woodstock, June 28, 1911, about one-half of the members being present. The officers, Dr. D. D. Carter, Woodstock, and Dr. Wm. F. Driver, New Market, were in their accustomed places. Dr. Thos. F. Keen, Hamilton, Va., was present as invited guest and presented a paper on Diphtheria. Drs. A. C. Biller, Forestville, D. L. Shaver, Maurertown, D. O. Foley, Mt. Jackson, and G. G. Crawford, Strasburg, members of the Society, also read interesting papers which were freely discussed. Several of these papers will later appear in this journal.

The next meeting will be held in December.

Flaws to be Patched up in Pure Food and Drugs Act.

Apropos of the decision of the Supreme Court of the United States, in the Johnson case, we are glad to note that President Taft, in a special message to Congress, denounced the makers of nostrums and "cure-alls" on account of the false claims made for their drugs, and recommended that the Pure Food and Drugs Act be so amended, at the present session, as to overcome its weak points.

Senator McCumber has already offered a bill in the Senate for the amendment of this law, and the House also expects to take up the matter.

Institutional Census.

The Department of Commerce and Labor, Bureau of the Census, Washington, D. C., has issued an announcement of the preliminary count of the population of the United States for 1910, in institutions comprising prisons, almshouses and institutions for juvenile delinquents, and for the insane and feeble-minded. There is a most startling increase of 22.6 per

cent. in the number of insane in asylums alone since the time of the last enumeration in 1904. The increase in the other institutions is in a ratio that might be expected.

Vacancy at Catawba Sanatorium.

It is probable that Dr. John J. Lloyd, Jr., the present assistant resident physician at Catawba Sanatorium, will succeed Dr. W. E. Jennings, resident physician, whose resignation has been announced to be effective July 7. The State Board of Health will meet July 12th, and prior to this date will receive applications of those desiring to fill the vacancy.

Pupil nurses are also needed at Catawba, and applications for such positions should be sent to the Resident Physician, Catawba Sanatorium, Va.

Dr. A. S. Priddy,

Superintendent of the Virginia Epileptic Colony, located just outside of Lynchburg, was elected one of the two vice-presidents of the National Epileptic Association which recently met in St. Louis. Dr. Priddy is doing a splendid work at the Virginia Colony, and with a view to keeping abreast with advances in his special line at other institutions, visited the Epileptic Colonies in several States on his Western trip.

Virginia Board of Health.

Governor Mann has recently appointed Drs. L. T. Royster, Norfolk, J. H. Dunkley, Saltville, and Reid White, Lexington, to serve as members of the State Board of Health for terms of four years each, commencing July, 1911.

Dr. Royster, who is the only new appointee to the Board, has gained prominence in health matters in the State as chairman of the Board of Health of Norfolk, having been actively interested in health measures in that section of the State.

The American Association of Genito-Urinary Surgeons,

At its meeting in New York, May 31st to June 3rd, decided upon Philadelphia for its next annual meeting, and elected the following officers: President, Dr. Edward Martin, Philadelphia; vice-president, Dr. Edward L. Keyes,

Jr., New York; secretary-treasurer, Dr. J. Bentley Squier, of New York. Members of the Council are Drs. Chas. L. Gibson and Robt. H. Greene, both of New York.

Dr. J. P. Munroe Honored.

At the recent meeting of the Medical Society of the State of North Carolina, the class of 1905, of the North Carolina Medical College—the last class graduated while the College was still located at Davidson—had a reunion, fourteen of the twenty-six members of the class being present. As a token of their esteem for their president, Dr. J. P. Munroe, they presented him with a handsome pair of gold cuff buttons with appropriate remarks.

King George V. Honors Dr. Osler.

The many American friends of Dr. William Osler, formerly of McGill University, Montreal, and Johns Hopkins University, Baltimore, but more recently of Oxford, will be pleased to know that King George V., in honor of his coronation, has bestowed upon the doctor the title of Baronet, and that he will hereafter be known as Sir William Osler, Baronet.

Dr. S. C. Bowen,

A former resident of Tazewell, Va., has been elected a member of the resident staff of the New York Eye and Ear Infirmary, in which hospital he has served for the past eighteen months. Dr. Bowen is a graduate of the Medical College of Virginia of the class of 1905, later serving as interne at Memorial Hospital, Richmond, Va.

Dr. H. Stuart MacLean,

Owing to the pressure of his private practice, has resigned as professor of Pathology and assistant professor of Clinical Surgery at the University College of Medicine, Richmond. Dr. S. B. Moon has been elected to succeed him as professor of pathology.

State Board of Medical Examiners.

Four women were among the one hundred and fifty-eight applicants to practice medicine in Virginia, who appeared before the Board of Medical Examiners in Richmond, June 20-23.

The next meeting will be held in Lynchburg, Va., December 19-22, 1911.

Dr. William Henry Howell,

Of Johns Hopkins Medical School, Baltimore, was the recipient of the honorary degree of Doctor of Science from Yale University at its commencement this year.

Dr. Lewis Coleman Morris,

Birmingham, Ala., a former Virginian, who attended the 1908 session of the Medical Society of Virginia, as invited guest, has recently been visiting at his summer home in Hanover County, Va.

City Hospital, Lynchburg, Va.

Work has been started on the new City Hospital for Lynchburg. The hospital which is to cost \$30,000 is to be equipped with a tuberculosis division, and will be modern in every detail.

Wanted—

Assistant in mining practice. Must be energetic, in good health, and recent graduate. Single man preferred. Salary \$60.00 per month, which with extras will amount to about \$100.00 per month. Everything, including medicines, furnished. Good experience in surgery and general practice for young man, with chance for promotion. References required. Address "F. S. X.," care *Virginia Medical Semi-Monthly*.

Obituary Record.

Dr. William Dandridge Sale

Died at his home, Loretto, Va., June 25, after a brief illness, aged seventy-two years. He studied medicine at the University of Virginia and Medical College of Virginia, graduating from the last named college in 1864. He was a member of the Medical Society of Virginia and one of the most prominent physicians in Essex county. Dr. Sale was unmarried.

Dr. Grier McLaughlin Nickell,

For many years a leading physician and one of the most prominent citizens of Bath County, Virginia, died suddenly in his home at Millboro, on June 27th. He was born in Union, W. Va., March 8, 1853, and after finishing his academic education, studied medicine at the College of Physicians and Surgeons, Baltimore, from which he graduated in 1881. He was for some years a prominent member of the Medical Society of Virginia. His wife and three daughters survive him.

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Original Communications.

SOME SUGGESTIONS AS TO THE ETIOLOGY OF PELLAGRA.*

By CHILTON THORINGTON, M. D., Montgomery, Ala.

Accurate knowledge of the etiology of a disease is indispensable to its control, cure and prevention. Owing to a lack of such knowledge numerous epidemics of the past ran their disastrous course. Yellow fever alone has killed enough people to sufficiently populate the vast areas it has swept. Probably many who are here to-day have fought the disease in more than one of its visitations, and scarcely would it be possible to forget the epidemic of 1878, when the Gulf States and Mississippi Valley, up to Cairo, Ill., were visited with so malignant a type of the disease as to cause death even among the wild and domestic animals.

Yellow fever had its birth in the West Indies, and its death in the discovery of its etiology. Malaria flourished for centuries because of the mistaken notion regarding the mode of its contraction and transmission. Such prophylactic good as accrued from efforts directed against its extermination was altogether accidental or incidental—such as draining ponds, swamps, etc., in order to dispel the miasma. The mosquito was regarded as an annoyance only, but the miasma was looked upon as a concentrated essence of bodily ills, if not the precursor of certain death. Malaria has laid tribute upon more territory than any other disease and, according to respectable authority, more than one Empire has tottered and fallen into decay before its scepter. The disease was born—we know not where—but, like yellow fever, had its death in the discovery of its etiology, inasmuch, as recent findings have put it well within the province of man to decide whether or not the disease shall be relegated to the sphere of

historical interest only. The end of the nineteenth century would appear to be far too late to have definitely located the causation of these diseases, that is, their origination from the mosquito. The price paid for this knowledge is so dear that, all that is saved alone compensates for it.

Now that the South is saved from yellow fever, and has practically received the capitulation of malaria; has "thymolized" the willing and the unwilling, she is in better condition to deal with our obtrusive foe, pellagra, who comes to us a stranger with strange mien and ways. Most earnestly do we, of the South, invite the assistance that has hitherto so cheerfully been lent us by our brothers from the North, East and West in our fight with this wily foe.

I now take up the subject for discussion without further prefatory remarks, except to acknowledge the lack of opportunity to gather experimental data supportive of reasoning by analogy; but, after all, to reason by analogy needs no apology, for close analogy on the one hand might prove more convincing in the absence of confirmatory proof than the "*post hoc ergo propter hoc*" on the other.

It would indeed be folly to treat lightly the researches of Lombrosa, Marie, Lavinder and others who have produced such persuasive, but not convincing, testimony against corn, and whether they be able or not to establish indubitable evidence in support of their claims—which remains to be seen—their labors are valuable contributions to science and are large assets to the medical profession.

The probe of scientific research seems to have found entrance into new channels, and with its percipient point is feeling here, there and yonder for facts to account for yet unexplained phenomena. Thus new schools sprang up as the behaviour of pellagra would frequently not conform to what was expected of it according to the prophesy of the Zeists; indeed it became necessary to improvise a special

*Read before the American Society of Tropical Medicine, at New Orleans, La., May 18-19, 1911.

name for certain cases "doing stunts" utterly inexplicable on the hypothesis of a disease attributable to any form of food. These cases they called "pseudo-pellagra."

However difficult it might be to trace the evolution of the maize theory from its incipency to the present day teachings, a sufficient number of glazes still remain to indicate the route taken by the Zeists while yet wandering in the maze of uncertainty. Whether pellagra antedated the introduction of corn into Europe is not recorded, therefore, that valuable point can never be proved. The germ and parasitic origin of the disease was not then dreamed of, so it became necessary to cast about for the cause for such a distinctive disease; the firmament, the seasons, the weather, habits and food all received their share of investigation, but, as is to be expected, food alone stood condemned, and naturally so, offering more points accounting for the symptomatology and epidemiology of the disease. Maize, being the article of food most generally used, especially by the poor, who seem particularly vulnerable to pellagra, received the closest investigation and gradually prejudice, as hard to dispel as the miasmatic theory of malaria, gradually increased until the theory was well-nigh universally accepted. The indictment against corn was not that it caused pellagra by virtue of any poison it contained, but, that the disease was the direct result of the continued use of the grain and due to its paucity of prerequisites. However subsequent analysis convinced even Marzari to search the grain for new discovery. Following this Balardini succeeded in collecting a hyphomycete (*sporisorum maydis*) which furnished sufficient material to establish another school of thought the "Zeitoxics," who succeeded in extracting from spoiled corn many watery, alcoholic and oily extracts declared to be causative of pellagra. Although the injection and ingestion of these extracts caused some very interesting pathology yet to call it pellagra is as far from truth as is the "motion picture" from real life.

To attempt to compile all the objections to the corn theory would be in excess of the limits of this paper, however a review of the most important discrepancies is helpful and conduces to clearness.

Experiments hitherto made with corn have, in the main, been confined to the lower animals; this being true much that is to be desired in the way of experimental data is necessarily

lacking. Corn, whether sound or spoiled, fed to lower animals, has furnished not a single proof deserving of serious consideration, and the school which still insists that the grain is a cause of pellagra is itself having intestine wars.

Lombrosa endorses the claims of Von Deckenbach, who affirms that cultures of *oospora verticelloides* produce phenomena in animals similar to that of pellagra. But in offering explanations why rabbits, when fed on sound corn by himself and Audenine died, he has the following to say: "Many scientific inquiries are raised as to the possibility that pellagra may originate from sound corn. With Dr. Audenine I carried out a series of experiments upon animals with the result, to be sure, that rabbits fed on sound corn died after a certain time, but I am satisfied myself that our results demonstrated the fact that we were dealing not with a poison derived from corn, but with the impossibility of adapting the food used, a grain, to the natural requirements of herbivorous animals." Why did not Lombrosa drop that hint before endorsing Deckenbach's claims? In other words, if sound corn killed rabbits in his own experiments because of the impossibility of adapting the grain to the requirements of herbivorous animals, why should not sound, or unsound corn, plus the *oospora* cause various manifestations as well as death?

Corn to cause pellagra, according to most authorities, must be gathered and cured during damp seasons. It is stated that following these seasons the disease is most prevalent. However true that may be, it is equally true that damp seasons give occasion for increased numbers of mosquitoes.

Should Sambon's statement be true that pellagra is found where corn is neither cultivated nor eaten, that of itself would well-nigh be proof sufficient against the specificity of the grain. In one of my own patients with a well-developed case of pellagra she positively denied eating corn products since adult life.

The geographical distribution of pellagra is most interesting and for our purpose we shall use the list as given by Marie. His distribution of cases in the United States is as follows:

Endemics and Cases Relatively Numerous.—Virginia, North and South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, Tennessee and Illinois.

Endemics and Cases Few.—Pennsylvania, Maryland, Kansas, Arkansas, Oklahoma, Kentucky, California.

Sporadic or Doubtful.—Massachusetts, Iowa, Ohio, New Mexico, Colorado (?), Missouri, Vermont, Rhode Island, West Virginia, District of Columbia, New York (imported cases), Indiana, Wisconsin, Washington and Michigan.

This reminds one of a printed diet list, and would appear to have been made especially for the peculiar requirements of *yellow fever* and *malaria*; showing what states they may or may not partake of. But where are the great Western corn states, do they appear in the list of Southern States where "endemics and cases are relatively numerous?" Does the West keep back her sound corn and send the unsound to the South? Not only is the geographical distribution of pellagra tropical and sub-tropical, but it is possible to make the line of demarcation more arbitrary. Within a state pellagra is more common in the rural districts than in the towns and cities, and, at least, in our locality, more common suburban than urban. This must assuredly be due to a more insanitary and unhygienic condition of the rural districts as compared to that of the city; in other words, it is quite possible that *drainage* is better in the city than the rural districts. The poorer classes seldom live in screened houses, or sleep under mosquito nets.

Seasonal changes are most characteristic of the disease—spring and autumn furnishing the most cases. The following is a list of reported deaths from pellagra in Alabama for the years of 1909-10:

1909.	1910.
January 1.	January 10.
February 1.	February 10.
March 0.	March 12.
April 3.	April 12.
May 9.	May 21.
June 8.	June 21.
July 8.	July 22.
August 8.	August 39.
September 15.	September 29.
October 17.	October 31.
November 18.	November 21.
December 24.	December 18.

This list although including only 360 cases shows a rapid increase of death with the advent of spring, and a corresponding diminution

during winter. Such periodicity is not reconcilable with the record of deaths occurring as results of a toxic myelitis induced by spoiled corn.

The reason why so many pellagrins are found in asylums for the insane is that insane pellagrins are committed to them the same as those afflicted with other forms of insanity, but this does not explain why so many cases seem to have their *origin* there as well as in many of the other eleemosynary institutes.

Samson's theory that pellagra is caused by the bite of the sand fly (*simulium reptans*) is questioned by L. O. Howard, chief of the bureau of entomology, Department of Agriculture U. S. He states that the *simulium reptans* does not occur in this country; however, there are 27 other species. He believes that Samson is incorrect in his conclusion.

The habitat of the sand fly does not correspond so closely to the distribution of pellagra as does that of the mosquito.

Pellagra is frequently accompanied by such diseases as amobiasis anchylostomiasis, malaria, etc., all of which according to the doctrine (*noscitur ex sociis*) tends to point to its parasitic origin.

The most successful treatment of pellagra thus far, seems to be that adopted on a hypothetical parasitic, and not zeitoxic concept. e. g., Arsenic and quinine are helpful if not curative in many cases.

When pellagra was first beginning to cause concern and alarm in Alabama, corn products were regarded with much suspicion and as a consequence the consumption and sale of corn meal was seriously threatened. For this reason, as well as others, I published an article (August 25, 1909), which subsequently was republished in the Gulf States Journal of Medicine and Surgery, January, 1910, and so far as I am aware is the first published specifically pointing out the mosquito as causing pellagra. The article reads as follows:

"Now that pellagra has broken through its indigenous confines of foreign countries and has found its way into the United States, it has given occasion for much discussion, not merely because of the pernicious tendencies of the disease, but, also, because of the incriminating evidence supposed to have been obtained in favor of diseased maize or corn as the causative factor of the malady. Pathologists would do well to direct their attention towards the ob-

scure etiology of this disease, inasmuch as the present theory of diseased meal meets the indications but in a measure; therefore, to put a stigma on a commodity so indispensable as corn and its products, will inevitably cause incalculable harm to the planters, and unwarranted hardship upon those denying themselves of that which heretofore has constituted their chief article of diet. There are many families in Montgomery, and probably all over the South, who have given up the use of meal because of its association with pellagra. If the medical profession is not able within a reasonable time to establish the fact that diseased meal plays no part in the causation of pellagra, permanent prejudice will become established in the minds of those who are timid or skeptical.

"If pellagra were caused by eating diseased meal, the occurrence of the disease would not have been restricted to certain localities, but might be looked for with as much probability of finding it in one country as in another, that is, wherever corn is extensively cultivated and used for food. The occurrence of the disease in the United States would not have been so delayed, neither would it have waited until the disease was introduced here, but would have been co-existent with the occurrence in the countries bordering on the Mediterranean Sea, and in Mexico and Yucatan. During the Civil War, when soldiers' rations consisted largely of corn meal—and the article was not so good then as in these days of pure food laws—had the diseased meal the property of causing pellagra, there probably would not have survived a sufficient number of soldiers to take up the work of rehabilitating the South, nor would there be now a sufficient number of negroes to give rise to the race problem. The people of the Western and Southern states are liberal corn eaters—in fact, corn in some of its various combinations and preparations furnishes many their 'daily bread,' and has been doing so for over a hundred years, and yet it does not appear to have given rise to symptoms characteristic of pellagra. In 1883, Sherwell reported the first case known to have reached the United States. The patient was a Genoese sailor coming into the port of New York. Subsequent to this, sporadic cases have been brought to light, but not until 1906 does it appear that anything like an epidemic of the disease has ever occurred in this country, when at the

Mount Vernon insane hospital for negroes, according to the statement of Dr. George H. Searcy, there occurred eighty-eight cases, the epidemic being started from a few patients brought there from Tuscaloosa. Other like institutions seem to have had more than their share of pellagra, and that the asylums should experience more cases than are found elsewhere is no argument in favor of unsound meal being causative of pellagra, as it is unreasonable to suppose that the meal bought by, or sold to, these institutions is of inferior quality to that used generally.

"With my limited experience with pellagra I trust that it will not be considered presumptuous should I venture a suggestion as to the probable cause of pellagra, or question the present teachings as relate to diseased meal, as I find facts associated with pellagra more than suggestive of blood parasitism, which of course would intimate an intermediate host of some kind, possibly through the mosquito, as this insect more than any other has the distinction of causing and disseminating many definite diseases, among which we might mention yellow fever, malaria, dengue, elephantiasis, etc., and each year will probably add new, or old, diseases to the list of those already known to be caused by the mosquito.

"In support of the parasitic origin of pellagra, we need only briefly review the peculiar characteristics of the disease:

"First, it appears to be infectious. Dr. J. M. King of Nashville, Tenn., reports eleven cases occurring in an institute of charity at Nashville as the result of one case having been brought there.

"Second, the clinical course of the disease closely conforms to that of other parasitic diseases, and not that caused by grain poisoning.

"Third, there is a periodicity about the development of pellagra, the spring causing it to become active after having passed a stage of latency during the colder weather.

"Fourth, its geographical distribution—tropical and sub-tropical—is that of other diseases of parasitic origin.

"While I make no effort to establish any relationship between pellagra and malaria, I will merely compare the two diseases because malaria being a parasitic disease, has many symptoms closely resembling those of pellagra. A few of the most conspicuous symptoms of pellagra are stated to be malaise, headache, ver-

tigo, ringing in the ears, spots before the eyes, conjunctivitis, either salivation and sore mouth, or dryness of mouth and tongue, gastric disturbances, diarrhoea (however this may occasionally alternate with constipation), disorders of vision, paralysis, and a characteristic skin eruption which makes the appearance on those parts of the body exposed to the sun's rays, as the back of the hands, feet, face and neck. There is usually or frequently, slight fever, however, as a rule the fever stands in the background. Nervous manifestations are various and serious, frequently mental alienation being a distal result of the disease, should death fail to interrupt the process before reaching that stage. Now malaria may cause any or all of these symptoms, even the eruption in some cases, being in a degree simulated, as where it is accompanied with herpes zoster when restricted to the hands, face and neck. That the eruption is localized in pellagra is no disproof of its parasitic origin, and may be as hard to explain as is the gigantic swelling of elephantiasis, caused by the blocking of lymphatics by a parasite called filaria, which is injected into the circulation of man by the mosquito, culex fatigans.

"It is quite significant that the only treatment that has proven of any service in chronic forms of malaria, is the treatment of most service in pellagra.

"In view of great mutability of all theories, one must be over cautious in accepting them, unless by the advancement of science they are placed among the treasured facts. Malaria existed many decades under the mistaken etiology of 'bad air,' or miasm, in fact, from this derived its name, and since it has been absolutely determined that the disease is due to a blood parasite (plasmodium malaria) malaria is now a misnomer. Should any further facts be disclosed as to the cause of malaria, it will merely be an addition to science, and will in no wise weaken the present accepted views.

"It is true that the specific organism of pellagra has as yet not been determined, but this may be due to staining difficulties as was the case in yellow fever and many other diseases.

"Until something more definite is learned of the cause and dissemination of pellagra, I am strongly of the opinion that pellagrous patients should be securely screened from the bites of mosquitoes. This is not intended as

a suggestion to those in charge of such cases, for I am confident that all necessary precaution is being taken by them, but a few doubtful cases may never come to the notice of the medical profession. Just as malarial patients carry with them the blood parasite—hemameba—and the same may be transmitted to others through the agency of the mosquito, acting as the definitive host, so may it be possible for pellagrous patients to have in their blood some form of parasite, or protozoa, which when injected into the human body causes definite symptoms of pellagra.

"The best interests of our section, and of the country generally, require that a commodity of such necessary and universal use should not be condemned except upon the most satisfactory scientific proof, and I merely offer the foregoing suggestions with the hope and belief that further investigations will relieve the producers and consumers of corn from the losses the present theory will entail."

In conclusion I wish to make a suggestion whereby innocent and useful lives might be spared while experimenting in the direction of the hidden etiology of pellagra. If it were possible to legalize such a method, condemned criminals should be used for humane experiments. If the Constitution could not be changed, then upon promise of the governor or pardoning board of a commutation of sentence to such criminals as would consent to humane experiments. I am sure all material desired would be forth-coming. Such criminals would far better serve the human race than by digging coal or as feasts for worms. Having this material, let the Zeists and Zeitoxics cultivate, gather and cure corn in every conceivable way said to cause pellagra. Let Balardini's sporidium maydis be tried: Ceni's aspergillus fumigatus and flavescens also Besta's penicillium glaucum. Do not forget Tizzoni's streptobacillus pellagrae—although he may have done so. Have Sambon to bring over the sand flies and others the mosquitoes. Try all these out on the pellagrin and the criminals, as was done with yellow fever and malaria; this done, pellagra cannot longer keep secret the mystery of its etiology.

Any One a Sufficiency.

Deaths reported at Amoy, China, from July 1-15, included a number from bubonic plague, smallpox and cholera—a bad trio to combine.

ANESTHESIA IN RECTAL SURGERY.*

By LLEWELLIN ELIOT, M. D., Washington, D. C.

In the treatment of rectal diseases anesthetics will frequently be required, either as the components of local applications or to aid in making painful examinations, in the examination of nervous or unruly patients, and in operative work. They are local or general, as the situation or condition demands. As a general rule, patients appear more apprehensive of and more sensitive to pain when they seek relief for rectal affections.

The agents used are chloroform, ether, ethyl chloride, nitrous oxide gas, cocaine hydrochloride, eucain, novococain. Schleich's solutions, hyoscine and morphia, hyoscine, morphia and scopolamine, chloretone, orthoform, alypin, quinine and urea hydrochloride, and the infiltration of sterile water.

The range of the usefulness of a local anesthetic is very wide in operative work which will not require more than twenty minutes in completion, or in those cases where an extensive dissection is not necessary. In work of a more serious character and where an extensive dissection will be done the employment of a general agent will be required, because with the patient under this influence he is free from the psychic excitements and depressing influences which a local agent will produce, the operator has a greater opportunity to exercise his judgment, and he is not hurried in his desire to spare the patient pain, conditions which a local anesthetic will not permit. The employment of a general agent requires the services and the entire time of a skilled assistant. Under local anesthesia we can operate upon fissures, superficial abscesses, some fistulas, ulcerations, pruritus, and hemorrhoids. In some cases of hemorrhoids operated upon under a local anesthetic a return of the trouble will frequently be observed, a thing which rarely occurs when such cases have been operated on under a general agent, nor is this hard to understand. The induration and swelling produced by the injection of cocain, eucain, or sterile water will sometimes be so extensive that a complete operation has not been performed, some of the small vessels have escaped; therefore for this reason operations for hemorrhoids, fistula, prolapsus, and polypus require chloroform or ether to ensure success, and whenever it is possible to con-

vince a patient of this fact chloroform, in my opinion, is the proper agent.

Patients with affections of the heart stand chloroform better than ether; patients with tuberculosis should not be given ether, but chloroform instead; chloride of ethyl is too evanescent and nitrous oxide gas is seldom available.

The mortality of general anesthetics may be stated thus:

Chloroform	1 in	3,500
Ethyl chloride	1 in	8,700
Ether	1 in	15,000
Nitrous oxide	1 in	100,000

We can therefore assume some risks and responsibilities.

Anesthesia by cataphoresis may be a valuable method, still it is uncertain, therefore not generally applicable.

Carbon dioxide snow is attended by too great a sloughing to ensure its adoption.

Orthoform will produce a sensation of numbness, but touch is recognized.

Ethyl chloride, when used externally, causes severe pain during the time of the thawing out of the tissues, and sloughing may occur. When given by inhalation the drop method must be adopted, otherwise it will crystallize all over the mask; its action is quick. As to its danger in cardiac cases, opinions differ.

Novococain is frequently used, the solutions varying from one-half of one per cent to ten per cent. It is non-irritating.

The hypodermic injection of solutions of hyoscine and morphia is becoming very popular. The greatest objection to this form of anesthesia is the time necessary to elapse before the patient is ready for operation. The method of using it is: Two or three hours before the time set for operation grain 1-100 of hyoscine is given. Should the patient one hour before the operation be awake he is given grain 1-100 of hyoscine and grain 1-6 to 1-4 of morphia. If the patient at this time is awake, but very drowsy, the morphia is omitted from this second injection. Those who have employed this method have been very well satisfied with it, since with the inhalation of a small amount of chloroform or ether operations requiring several hours may be performed.[†]

The tablets of Schleich have many supporters. They are composed of cocaine hydro-

*Read at a meeting of the Medical and Surgical Society of the District of Columbia, February 2, 1911. For discussion, see page 199.

†Lynch—Virginia Medical Semi-Monthly, Vol. XIII., Page 188. July 24, 1908.

chloride, morphia hydrochloride, and sodium chloride, the amount of each varying from grain 1-100 to j. of the first ingredient, from grain 1-40 to 1-8 of the second, and from grain 1-5 to j. of the third. These tablets are very convenient to carry and afford the degree of anesthesia desired.

Sterile water has many advocates. Mason claims to have used it about 1891. Gant is another strong believer in it. It is not suitable for all cases; only such operations which are performed in tissues that can be made tense by the distension of the water and kept so for several minutes. In using sterile water for infiltration the water must be brought nearly to the freezing point, the syringe must be kept in ice until the time for using it, the needle must be fine and very sharp. It causes the tissues to swell and the injection is painful. The amount of water needed is large; it therefore will cause so great a distension as to be misleading. In an emergency, where no other agent is available, it may be employed.

Cocaine is very generally used. It may have a strength of 4 per cent. when used for hypodermic injection, but when such a percentage is used caution must be exercised to prevent absorption of a toxic amount. In general surgery this is usually possible, but in rectal surgery it cannot be confined; an average strength, therefore, of 2 per cent. will answer all purposes. Many operators prefer a strength as low as one-eighth of 1 per cent, others one-half of 1 per cent.

Stewart, as far back as 1883, recognized the antagonism existing between cocaine and morphia and suggested a formula: Morphia sulphate grain 1-4, atropinē sulphate grain 1-100, strychnine nitrate grain 1-30. The addition of a few drops of a solution of adrenalin will prevent bleeding after the operation, when the contraction of the arteries has passed away. For external applications a 10 per cent. solution applied directly to the mucous membrane will be required.

Solutions of eucain may be substituted for those of cocaine. Hirschman is partial to weak solutions—one-tenth to one-half of 1 per cent. He prefers it to cocaine. Hawley advocates one-eighth of 1 per cent.

The last agent to be considered is quinine and urea hydrochloride. This anesthetic has a great future, and it bids fair to eventually occupy the place given cocaine, eucaine,

hyoscine, and other local anesthetics. As it is neither irritating, nor poisonous, it is safe.

For many years quinine has been used by external application as an anesthetic.

Quinine and urea hydrochloride is made by dissolving hydrochloride of quinine in hydrochloric acid, adding pure urea. The mixture is filtered through glass-wool and then allowed to crystallize. It is soluble in water and in alcohol, is not irritating and produces anesthesia in about thirty minutes, which lasts for a period varying from several hours to several days. The strength of the solution may range from one-fourth of 1 per cent. to 3 per cent. These solutions may be boiled a number of times without destroying their power; the weaker solutions are the ones to be preferred.

With spinal anesthesia I have had no experience.

In conclusion, I recommend chloroform in operations upon the rectum. "If the patient has a weak heart, then chloroform is imperative for any operation; it must be given till reflex action is abolished."†

Ether is contraindicated where tuberculosis exists.

Eucain is one-half as toxic as cocaine. Quinine and urea hydrochloride is the safest and best local anesthetic in rectal surgery.

1106 P Street, N. W.

SOME MASTOID EXPERIENCES.*

By CLIFTON M. MILLER, M. D., Richmond, Va.

Professor of Diseases of the Nose and Throat, Medical College of Virginia; Laryngologist and Rhinologist to Memorial Hospital.

The surgeon who would successfully combat the pathological conditions arising in the mastoid portion of the temporal bone and its immediate environs must be prepared to operate extensively either upon the brain or in the cervical region, nor can he always tell before entering the mastoid bone what surgical conditions will have to be met. The purpose of this paper is to recite some illustrative cases, but it will not be amiss to mention briefly the indications for surgical intervention.

Long continued suppuration (six months to one year) from the middle ear which does not respond to careful treatment by local medication and drainage, or when attacks of mastoid tenderness complicate a chronic suppuration

†Hart and Barbour, *Manual of Gynecology*, Page 152, edition 1883.

*Read before Church Hill Medical Society, at Richmond, Va., April 12, 1911.

make operation sooner or later imperative. In acute cases where the membrana tympani has been freely opened and drainage is profuse yet in spite of this there is no subsidence of the tenderness over the mastoid antrum and tip after twenty-four hours of rest in bed with heat applied over mastoid and antiseptic irrigation of the external auditory canal every two hours. If a case of this character is accompanied by sagging of the posterior wall of the external auditory canal, it will not recover without operation, but if there is no such sagging the case may get well of this attack, but will most probably have a subsequent attack that will make operation imperative.

The sagging of the posterior superior canal wall is, in the opinion of the writer, the best indication for operation, he never having seen a case in which this symptom was marked that did not require operation for its cure. Very profuse discharge from the middle ear, which does not subside under proper treatment of rest, etc., when accompanied by sagging of the posterior superior wall of the canal, indicates operation even though the symptoms of pain and tenderness over the mastoid be absent. Red and inflamed skin over the mastoid with an acute suppuration of the middle ear should be met with prompt surgical treatment, if relief does not come promptly as a result of local bloodletting and hot applications. Evidences of subperiosteal abscess, meningitis, epidural abscess, brain abscess, meningeal irritation or sinus thrombosis require prompt opening of the mastoid process and complete removal of the cells together with such other surgical treatment as the condition may demand.

Case 1. Judge — consulted me May 15, 1910, on account of a profuse discharge from middle ear. Pain had been present on the previous day but, with appearance of discharge, pain ceased. Discharge profuse and serious. Large opening caused by spontaneous rupture of membrana-tympani; some mastoid tenderness. Patient was ordered rest which he did not at first take, but irrigation of the ear kept him in good condition and the mastoid tenderness subsided. The discharge did not diminish in amount and became purulent at the end of ten days. On June 1st, he experienced slight chilly sensations and rise of temperature to 101 degrees which subsided in four hours and did not again return. June 6th, sagging of posterior superior wall of canal very marked,

and discharge not diminished in amount. Operation was advised and accepted. It being upon the eve of my departure for the St. Louis meeting of the A. M. A., he elected to go to New York and be operated upon by a relative there. His recovery was uneventful.

Case 2. Charles, white, age twelve, was brought to my office October 9, 1910, on account of earache. History of previous discharge from ear. Ear discharging freely, and mastoid tenderness on pressure over antrum and tip. Under appropriate treatment, symptoms had somewhat subsided the next day, but on October 11th, there was an exacerbation and operation was advised. Simple mastoid operation performed October 12th and epidural abscess found. Patient did well till October 15th when temperature rose and began to fluctuate between 100 degrees and 103 degrees with symptoms of meningeal irritation. October 17th, large part of temporal bone over temporo-sphenoidal lobe removed; dura found to be hard and incompressible; incision into dura revealed soft spot in lobe and a grooved director sank by its own weight for over an inch into the temporo-sphenoidal lobe and revealed a large amount of necrosed cerebral tissue, but no localized abscess. Condition improved somewhat on October 18th, but he died on October 21st, his temperature having gone up to 105 1-2 degrees F. a few hours before death. There was no post-mortem obtained.

Case 3. Mrs. C. W. E., white, age twenty, referred to me July 31st, 1910, by Dr. W. J. West on account of acute pain in ear. She gave history of intermittent discharge from ear for past five years. Discharge is now free; some mastoid tenderness, which treatment caused to subside in twenty-four hours. Discharge reduced in amount, but did not disappear, and operation was advised September 1st and rejected. On October 13th, I was summoned to her residence to see her in an acute attack of earache. Found acute inflammation of middle ear, some sagging of posterior superior canal wall and intense tenderness over entire mastoid. Operation advised.

On October 14th, simple mastoid operation was done and much necrosed bone and pus found in mastoid cells. Wound left open throughout its entire length and packed. There was an infection by bacillus pyocyaneus in this case, and if a single drop of pus collected in the wound and was not taken up by the pack-

ing, there would be a sharp rise of temperature to 103-104 degrees, which would not subside for twenty-four hours. This occurred twice during her sickness, once during my absence from the city for a couple of days. Her recovery was complete and she now has good hearing in that ear.

Case 4. Miss —, trained nurse, has consulted me several times in the past two or three years on account of a chronic suppuration of the middle ear with occasional attacks of mastoid pain and tenderness. Operation has been repeatedly advised but deferred for various reasons. On October 24, 1910, after an unusually severe attack of mastoid pain which lasted several days, a simple mastoid operation was done. Bone found to be very dense and hard. Antrum and epitympanic recess filled with granulation tissue and a small amount of pus. Recovery uneventful with good hearing.

Case 5. G. B., age twelve. This boy was seen November 23, 1910, in consultation with Dr. R. D. Garcin. He had diagnosed typhoid fever of atypical type, and the purulent trouble in mastoid was probably caused by typhoid infection. There was a profuse fetid discharge from the middle ear and a bagginess over the mastoid process at the site of a scar where the mastoid antrum had been opened about two years before by some one else. General condition bad. Operation advised but not accepted. On December 1st, on account of failure to improve, simple mastoid operation was done and cells cleared out. Improvement began at once, but for a week after the operation the dressings continued to be saturated with pus in spite of thorough antiseptic irrigations with bichloride of mercury and carbolic acid. Ichthyol, 5 per cent solution, used to irrigate, caused the first diminution of the purulent discharge and the strength was increased to 10 per cent in a few days; ten days from beginning its use, pus had entirely disappeared. Recovery was slow but uninterrupted.

Case 6. Miss —, age seventeen. Referred by Dr. Benjamin Hord. Seen on February 25, 1911. Had been having chills for several days and high temperature, with excruciating pain about the ear. Condition septic. Aural discharge profuse. Skin over mastoid very much thickened and inflamed. Immediate operation advised and accepted. Upon removal of the mastoid cortex, the entire interior

of the process was found to be broken down and filled with pus and granulation tissue. The wall of the lateral sinus was destroyed for half an inch. Sinus healthy. Mastoid thoroughly cleared out and wound lightly packed. Improvement began at once, though she had a marked methemoglobinemia which did not entirely clear up for ten days. She is now well.

The above cases have been selected from a number operated on during last year, because a study of them shows that each case must be treated as an individual and not under any general class.

Case 1 presented no symptoms demanding operation except sagging of the posterior superior canal wall, for many cases of acute suppuration of the middle ear have had quite as profuse a discharge as was present here and recovered without operation. Case 2 of brain abscess with very low resistance of the individual had the termination that the majority of such cases have. Had the wound in case 3 been sutured and only a cigarette drain been used, as some advise should be the invariable practice, the result, in the opinion of the writer, would have been disastrous. Cases 3 and 4 of chronic suppuration of the middle ear did not have a radical operation done on them, because it was advisable to preserve the hearing which remained fairly good. The result justified the departure from the beaten path of operation for chronic suppuration. In case 5 ichthyol solution was used for irrigation with much success, though such use had never been brought to my attention before; and it is not my practice to irrigate a mastoid wound unless there is direct indication for so doing. Case 6 simply serves to illustrate the promptness with which a very profoundly septic case will recover when opportunity is given it to do so by clearing out the focus of infection.

217 East Grace Street.

EXPERIENCES WITH GRAVE CASES OF TYPHOID ACETONURIA.*

By J. H. HIDEN, M. D., Pungoteague, Va.

Within the last few years our attention has been called to a peculiar form of auto-intoxication which sometimes occurs in grave cases of typhoid fever, and is designated as an "acid intoxication."

This condition is a very grave one, and if not

*Read by title before the Seaboard Medical Association of Virginia and North Carolina, at Winston, N. C., December 6-8, 1910.

soon recognized by the attending physician is more than likely to prove fatal. When fully developed the patient is described as having a sort of sweetish, fruit-like odor to the breath, and the breathing is especially characteristic—rapid and very deep, differing in this respect from that in the common complication of pneumonia. The urine of these cases also contains a large amount of acetone; hence, for all clinical purposes, the condition can be regarded as purely a grave development of a typhoid acetonuria.

With the experience in the management of over a hundred and fifty cases of typhoid fever I recall seeing the condition of typhoid "acid intoxication" on only two occasions. In both cases, owing to circumstances over which I had little or no control, the patients were very badly managed. In the first the patient was a young married woman, aged 23 years, a primipara; four months advanced in pregnancy and suffering with the persistent, characteristic nausea which often follows this condition. The nausea became aggravated as the fever advanced. In this extremely irritable condition of the stomach her diet consisted almost entirely of small quantities of predigested beef, this appearing to agree with her better than anything else we could secure. After the fever had run its course of several weeks and the temperature had become normal, her family was anxious to move her to another part of the county about six miles distant. Though warned of the danger of doing so, this was nevertheless accomplished. Soon after arriving at her new quarters a relapse occurred, and the nausea and vomiting returned. As this relapse appeared to be subsiding and the temperature again approached normal, the patient miscarried, giving birth to a dead foetus. In considering this abortion, there was little or no hemorrhage; the foetus showed no signs of decomposition, and there were no evidences of a puerperal sepsis. Indeed, the patient seemed to be doing well for six or eight hours, when the symptoms of "acid intoxication" set in. The restlessness and rapid, deep breathing, so characteristic in these cases, were not recognized as such at that time, either by the consulting physician or myself, the condition being considered as merely weakness and prostration from a typhoid toxæmia.

After developing the symptoms of "acid intoxication" the patient lived about eighteen hours. Note in this case we had four condi-

tions, each of which served as a factor in favoring an "acid intoxication": 1, The continued high temperature of typhoid with feeding which approached the point of starvation; 2, the almost exclusive use of a proteid diet; 3, pregnancy with labor during the course of the disease; 4, pregnancy, resulting in a dead foetus.

The second case was a negro woman, aged about 45. She gave a history of about three weeks illness with pronounced typhoid symptoms, during which time she had neither doctor nor nurse, and had only several little children in the house to look after her wants. The case, therefore, was badly neglected. When I saw her she was giving evidences of "acid intoxication" with the characteristic labored breathing. My visit was in the morning about 9 o'clock. The pulse was 120 to the minute, and respiration 35, with deep, abdominal breathing. The tongue, mouth and throat were quite dry, temperature 102.5 F., and evidences of its having been much higher, with a history of nose-bleeding.

Physical signs gave enlargement of the spleen and marked tympanites; but there were no evidences of pneumonia, pulmonary cedema or peritonitis. The patient having had no attention, had practically starved during the last ten days of her illness. Note again the several factors entering this case which favored an "acid intoxication": 1, The continued high temperature; 2, insufficient nourishment; 3, a proteid diet; 4, absolute neglect.

In this case sugar at stated intervals was prescribed; but owing to some misunderstanding very little sugar was given. The patient died within about forty-five hours after my first visit.

Now, in discussing the subject of typhoid "acid intoxication" I wish to repeat that for all clinical purposes we may consider it as purely a toxic degree of a typhoid acetonuria, as these cases are known to possess an excess of acetone in the urine. Moreover, I wish to emphasize that the most approved, modern methods of feeding, reducing temperature, quieting the nervous system, and stimulating metabolism greatly diminish the number of cases of "acid intoxication." Indeed, under the skilful management of typhoid fever the violent form of "acid intoxication" seldom occurs. And so to get a more comprehensive view of the subject, I call your attention to

the general subject of acetonuria. For just as pulmonary œdema is better understood by a thorough acquaintance with cardiac and nephritic disorders, so may this form of toxæmia be more clearly understood by studying acetonuria in the various pathological conditions in which it often appears.

Though slight traces of acetone may sometimes appear in normal urine, yet the appearance of any degree of it is generally considered as pathological. It is found in the following conditions: During starvation, febrile conditions, typhoid fever, typhus fever, small-pox, scarlet fever, measles, Bright's disease, carcinoma, cerebral psychosis, pneumonia, perityphlitis, narcosis following major surgical operations, pregnancy in the ninth month, and during tedious labor, and especially in such cases as are complicated with a dead foetus. Indeed, it has so often appeared in this latter condition that Vicarelli considered an acetonuria in pregnancy as a sure sign of the death of the foetus. This view, however, has not been sustained by some other observers. I mention these things to show that while a simple acetonuria is a very common thing, and is found in a great variety of conditions, yet a very highly toxic degree of it is more an accidental complication than a general symptom in febrile conditions. And among the various factors which enter into the etiology of an "acid intoxication," the most common may be found in either improper feeding or insufficient nourishment while under the effects of continued high temperature.

In considering a faulty diet, it is well known that an exclusively proteid diet favors the production of an acetonuria. Hirschfield has shown that an acetonuria in febrile states, and especially in carcinoma and in diabetes mellitus, could be reduced, or made to entirely disappear by a free administration of the carbohydrates. This author further suggests that in diabetes mellitus the acetone in every case should be carefully followed and carbohydrates administered whenever the proportion of acetone reaches a dangerous degree. Simon, of the Johns Hopkins, not only concurs in this opinion, but also states that a direct relation exists in this disorder between the amount of acetone excreted and the intensity of the disease, and that the maximum excretion is observed toward the fatal end.

Within the last few weeks I have had the op-

portunity of testing the accuracy of this statement, and find it correct. The case was an old diabetic patient who had been under hospital care for a month or more, during which time he was confined to an exclusively proteid diet. Upon examination of his urine I found that a 20 per cent. solution gave a positive reaction for acetone, and, as I feared, the patient went into diabetic coma within twenty-four hours from the time of my first visit.

Now, let us consider acetonuria in continued, high temperatures. Though Purdy regarded acetone as a decomposition product of albumins, yet he asserts that the amount of acetone in urine of febrile conditions of high temperature corresponded closely with the height of the temperature, always rising and falling with the latter. He was, therefore, of the opinion that blood changes under high temperature entered into the etiology of this form of acetonuria. He also endorsed the view of Von Jaksch and others that a condition of auto-intoxication with acetone may exist with symptoms of restlessness, excitement, even delirium, which may either terminate favorably or end in coma and death. In view of these facts, we need no longer doubt that a peculiar, specific form of toxæmia, accompanied with an acetonuria, sometimes appears in typhoid fever, which may be called an "acid intoxication." This condition is most frequently found in either neglected cases or in those fed upon a faulty diet; and under this head may be included insufficient nourishment, too great a proportion of nitrogenous food, or the exclusively proteid diet. Any of these phases of faulty feeding when occurring in cases of continued high temperature should be borne in mind as factors which favor a serious toxic acetonuria. Though the symptoms of this peculiar form of toxæmia in typhoid fever are described by various writers as a condition of restlessness with labored, rapid breathing of a deep character, it is quite probable that a milder form of the same toxæmia may be found in a different classification of symptoms. For instance, many cases of great restlessness, delirium, stupor, and coma in typhoid, especially in the absence of hemorrhage or serious cardiac involvement, are almost certainly more or less due to an excess of acetone in the system. Just here I may add that in the examination of a very limited number of specimens of typhoid urine I found an acetonuria in every

case. The proportion of acetone in each case corresponded to a very striking degree with the gravity of the case. In one with the symptoms of continued hyperpyrexia, delirium, slight hemorrhage, stupor, etc., a 12 per cent. solution of the urine gave a positive reaction for acetone.

In addition to my own personal experience in the matter, the opinion above stated is supported by the fact that the continued high temperatures which favor delirium and coma also favor a toxic acetonuria. The most approved methods of feeding, along with those for reducing temperature, are equally efficient in avoiding the development of each of these conditions. Moreover, the opinion is again supported by the fact, already referred to, that in diabetes mellitus coma is preceded by an acetonuria, and appearance of coma in this disease is in direct proportion to the amount of acetone excreted in the urine. Further, the most certain way of avoiding an approaching coma is found in the immediate reduction in the formation of acetone by the administration of carbo-hydrates in the patient's diet.

Now, if further investigations along this line prove my latter position to be true, namely, that delirium and coma in typhoid fever are often due in no small measure to an excess of acetone in the system, it logically follows that since so much objection of late has been raised against the use of milk in typhoid fever, care should be observed that our diet should not be too much confined to nitrogenous food. It also follows that cases which are unable to retain sufficient nourishment, including those following intestinal hemorrhage when it is considered advisable to withdraw for a while all food, as well as cases of continued high temperature with restlessness, delirium and threatened coma, should be watched with an eye upon the urine. When this reveals any marked excess in the acetone excreted, carbo-hydrates should form the principal part of the patient's diet.

If the form of auto-intoxication should develop to the degree of bringing on the peculiar, rapid, deep breathing, above referred to, then glucose or sugar in half-ounce quantities should be given every three or four hours until these distressing symptoms are relieved. (Simon, Vanderhoof.)

If the patient is unable to take by mouth such quantities of sugar, Dr. Vanderhoof, of Richmond, Va., suggests that it be given sub-

cutaneously, as the patient is in desperate need of glucose. The same author cites three cases in his own experience in which the grave symptoms of the deep, labored breathing were soon entirely relieved, and followed with recoveries by the timely administration of sugar.

In conclusion, I wish to say that the word toxæmia, as applied to grave conditions in typhoid fever as well as in many other diseases, is an indefinite, broad term, which may be, and often is, applied to the outcome of a combination of toxic products rather than a specific toxine. If any one of these factors can be removed at a critical time in the course of the disease, it often assists nature in the saving of life.

PROPHYLAXIS OF TYPHOID FEVER.*

By D. O. FOLEY, M. D., Mt. Jackson, Va.

Typhoid fever, as we all know, is an acute infectious disease of which the definite cause is the specific bacillus of Eberth, discovered in 1880.

There is no more important work before the medical man than the prevention of disease. The high rank attained by the medical profession of this day, its great importance in the public eye, is because of its power to prevent or avert disease and not because of its ability to cure.

The important measures for the prevention of typhoid fever are, first—the isolation of the patient and thorough disinfection of the excreta; second—the careful inspection of drinking water as well as the source of supply and the means by which it is conveyed; third—careful inspection of food, especially the milk; fourth—cleanliness of the surface, the removal of garbage and other impurities, and the prevention of the saturation of the soil by sewerage, etc.

The complete isolation of the patient is necessary for many reasons. The attendant upon a typhoid case may convey the bacilli directly by handling the food or drink that is given to healthy members of the family. If care is not taken, the excreta may become dry and the germs be scattered in the dust of the room and infect anything that they fall into; therefore, be very careful not to keep any food in the sick room.

The dry bacillus may be inhaled and swal-

*Read before the Shenandoah County Medical Society, at Woodstock, Va., June 28, 1911.

lowed, or may multiply in the lungs. The nurse on a case of typhoid fever should not do the cooking, and especially should not do the milking, as it is extremely difficult for them to understand the necessity of proper disinfection in these cases. The patient should be in a well ventilated and well screened room, and I would emphasize the "well screened" part, as without this our patient is not isolated. Isolate from the fly and kill what few may get into the room.

There is incontestable proof that typhoid fever is feebly contagious; at Johns Hopkins Hospital 1.81 per cent of all cases are of hospital origin.

Thoroughly disinfect the stools and urine; be sure to do this before they leave the sick room, as this is the best way to prevent the spread of typhoid.

The disinfectants used for this purpose are carbolic acid, 1 to 40 or chloride of lime, 1-2 pound to the gallon. Acidulated solution of bichloride of mercury, 1 to 500, is an admirable disinfectant for the stools, but is *not harmless* to the plumbing. Milk of lime (white wash) is also good, used in equal volume with the stools; or boiling water mixed with them is also good. The above are the disinfectants most generally used.

The disinfectant solution should be thoroughly mixed with the stools and allowed to stand for several hours before disposing of it; in the country it should be buried three feet deep so that there may be no danger of its being brought to the surface again, and this should be kept up for a month after the fever has subsided. The water for bathing and vomit should also receive the disinfectant solution and be buried. The nurse should always wash her hands with disinfectant after bathing the patient or handling the discharges. All soiled clothing should be put at once into a solution of carbolic acid or bichloride for several hours and then boiled. Separate dishes, cups, etc., should be used for the patient and they should be well-boiled after being used. With termination of the case, the room should be fumigated, the woodwork being washed with a solution of the bichloride, 1-1000, and then it should be well-aired before using again.

A careful inspection of the drinking water and the source of its supply should be made. Typhoid fever is, no doubt, in the great ma-

jority of cases a water-born disease; this has been proven by the lessened mortality of cities from typhoid after a system of water works has been introduced and pure water obtained. The multiplication of germs in impure water being so much greater than in pure water shows how necessary it is that, apart from the presence of bacilli, the water should be free from all contamination and the source of all supply be carefully and frequently inspected. The wells should be situated at a distance from any source of contamination and be well protected from surface water.

Most of the wells of the present day are bored and have pipes driven in them to solid rock; the lumen fills completely and makes it most difficult for surface water or any other contamination to get in.

When the water is not pure, or when epidemics are prevailing, it is always best to boil the water and filter it. We cannot always trust ice either, for the bacilli will live for months in ice, unless the water has been sterilized before freezing, which I am afraid is not always done.

We should not forget the inspection of food, especially milk. Epidemics have been caused by contaminated milk, and all city dairies should be inspected to see that the disease does not exist in the neighborhood. If milk is suspected to contain the bacilli, the danger may be removed by boiling it. Oysters, too, are sometimes the source of typhoid, if fattened in contaminated water; those obtained from the deep sea are not contaminated.

Good drainage is an important factor in the prevention of typhoid. There is a direct relation between the amount of impurity of the soil and the number of cases of this disease. the bacilli growing much more rapidly in soil saturated with sewerage. Hot weather is likewise favorable to their growth.

For years typhoid has been looked upon as a filth disease, and it is still equally true that cleanliness is one of the best means of prevention. It therefore behooves us to clean up and disinfect our premises often; in fact, this is what the health department of the State is striving to get everyone to do.

As to the use of typhoid vaccine for preventive inoculation of healthy persons, I have had no personal experience with it to the present time, but no doubt we will use it in the near

future; it is especially recommended when epidemics are prevailing as also when travelling where you are liable to come in contact with bad water, etc.

Clinical Reports.

UNUSUAL EFFECTS OF POTASSIUM BROMIDE AND PASSION FLOWER.

By STEPHEN HARNSBERGER, M. D., Catlett, Va.

Some time ago I was called to see the daughter, a rather well-nourished, but pale-looking girl, of a poor farmer. She had that morning what the messenger called "a fainting spell." Her people thought she was dying. With returning consciousness she complained of backache and a choking sensation. I found the patient sitting in a chair (she said she could not breathe when lying down), with facial expression more indicative of fear than pain. Headache, slight palpitation and pain, aggravated by pressure, in the inguinal region. Three days before, her sickness came on, but only lasted one day. She attributed her condition to its sudden stoppage. I explained that she was in no immediate danger. Under the administration of nervines and sedatives she was soon well. She remained well for several months, when her father called and said that she was complaining somewhat as she did when I first saw her—especially of that pain and tenderness in the region of the ovary. I ordered

R Potassium bromide ʒ i.
Fl. ext. passion flower..... ʒ ii.
Waterq. s. ad., ʒ iv.

M. Sig.: Teaspoonful four times a day; last dose at bed-time.

Word from her stated that she took the medicine for eight days, when she rather suddenly became dizzy and blind, and though she omitted the medicine at once, these symptoms did not leave entirely for about thirty-six hours.

About the time I gave the above prescription a young and robust-looking laboring man (a section hand) applied to me on account of palpitation of the heart, dull headache and dread of impending danger. He had been an excessive tobacco chewer from early youth. A few years before coming to me, some minutes after drinking a couple of glasses of beer, he was suddenly cognizant of unusual heart action, with considerable difficulty of breathing and

a feeling as if his whole muscular system was in convulsive motion. This condition gradually subsided, and by the day following he felt as well as usual. He said he had not been able to work for two or three days on account of his heart beating so fast and strong at times. Examination showed area of cardiac dullness apparently increased and pulse full and strong. I ordered evacnants, and to quiet his nervous system and allay his mental uneasiness the same drugs given the case mentioned above. After taking the medicine two days he came to me complaining of a light, empty feeling in his head and loss of vision. Said he could scarcely see how to walk along the road. Examination of eyes negative. I told him to stop the preparation. He did so and the blindness left. A day or so later I advised him to try the remedy again. He tried it and, singular to say, with a return of the blindness.

Here we find two persons of certainly opposite conditions of the systems and dissimilar disorders similarly affected by the same drugs—with symptoms altogether anomalous to those usually produced by these drugs.

I might have attributed this exceptional action to some fault, change or adulteration of the preparations had I not filled the prescriptions at my own counter, and know that several prescriptions calling for various proportions of the same ingredients had been filled from the same bulks of each and were followed by no untoward symptoms; nor did prescriptions containing drugs from these same bulks produce any unpleasant symptoms thereafter.

The trouble must have been due to idiosyncrasy. Perhaps some one can tell me.

CASE OF MASTOID OPERATION UNDER LOCAL ANESTHESIA.*

By J. A. WHITE, A. M., M. D., Richmond, Va.
Professor of Ophthalmology, University College of Medicine.

I wish to report a case that may interest many members of the Academy, inasmuch as it is a rather unusual one in this community. On Friday, March 24th, I had a case of subacute mastoid trouble that had been going on for six or eight weeks, and had developed Bezold's. There was apparently no trouble over the antrum, but the tip of the mastoid was evidently infected and the tissues around it and in the neck adjoining were very much

*Reported to the Richmond Academy of Medicine and Surgery, March 28, 1911.

swollen and infiltrated. I arranged to operate under ether, and Dr. LaRoque was engaged to give the anesthetic. I suggested to the patient, however, that he might avoid all the inconveniences of general anesthesia by letting me try to operate under an injection of a solution of one-half of one per cent of cocaine with a slight admixture of adrenalin, and if at any time during the operation it caused him much pain, Dr. LaRoque was standing by ready to give him ether. I started the operation in this way and completed it by removing the mastoid cortex, the whole of the tip as in the usual manner, without giving the slightest discomfort. He told me when it was completed that it did not hurt him as much as the barber hurt him in shaving him preparatory to the operation. He got off the table, walked to his room, and immediately asked for something to eat, stating that he was as hungry as a hound. He has had no trouble whatever since the operation.

I report this case, because very few of these operations have been done in Virginia that I am aware of, although Dr. Day of Pittsburg has done quite a number in this way.

Proceedings of Societies, Etc.

MEDICAL AND SURGICAL SOCIETY OF THE DISTRICT OF COLUMBIA.*

Reported by JOHN DUNLOP, M. D.

The Sexascope.

Dr. Kober showed an illustration of the sexascope and spoke of a demonstration of it by some Englishmen when it was exhibited for the first time in this country.

Dr. Llewellyn Eliot read a paper on

Anesthesia in Rectal Surgery.†

DISCUSSION.

Dr. W. P. Carr agrees with Dr. Eliot in the main. There are three things to consider: the patient, the operation, and the site to be selected. We must give thought to the fear of the patient—of psychical as well as of physical pain—when using a local anesthetic. Does not favor local anesthesia unless a minor operation is to be done. Believes the waiting in the anesthesia room is harmful to the patient. Thinks there are many operations which can-

not be done well or safely under local anesthesia, and referred to cases having myocarditis. So much advance has been made in giving ether he thinks there is little danger in it. Does not think the sphincter can be well-dilated under local anesthesia, and if a complete operation is possible, the pain following it is greater. Alypin is his choice as a local agent. Referred to an operation where all local anesthesia made the patient sick. Had used quinine and urea, but it had not proved satisfactory—the wound was slow in healing. Had used spinal anesthesia, but on account of the danger attending its employment had abandoned it.

Dr. W. M. Sowers said there were two methods of anesthesia not dwelt upon by the essayist which occurred to him. The use of cocaine by Schleich's method was valuable in prolonged operations, such as in certain cases of exophthalmic goiter; here the tissues are carefully infiltrated, especially the skin, nerve and vessel sheaths. An important addition to this is the use of adrenalin with the weak solution—cocaine 1:1,000 with adrenalin 1:10,000. The second anesthetic to which he would draw attention was nitrous oxide combined with oxygen. It is possible to do prolonged operations with this. Saw Dr. Crile, in Cleveland, do a double-breast amputation, and has recently seen it used in a very ill patient with Graves' disease. It is especially valuable in certain very weak individuals where ether, or chloroform, or a local anesthetic is to be avoided. The patient is awake almost as soon as the cone is removed, and there is no nausea following.

Dr. Reichelderfer said he had used local anesthetics in major operations, and thinks, as Dr. Carr, that the shock is greater than the operation. In the last few years has used ether given by the drop and open method. In using local anesthetics, cocaine and adrenalin are his choice. Had used nitrous oxide and oxygen at Garfield Hospital; in amputation and in empyema following pneumonia there were no unpleasant symptoms; the only trouble with it was the degree of relaxation in abdominal work. The open or drop method has rendered ether much safer and less unpleasant, and lessened the necessity for local anesthesia, except, of course, for special indications.

Dr. P. S. Roy uses anesthetics very little. Myocarditis, he thinks, is hard to diagnose, as brought out by Dr. Richard Cabot. Hopes we

*Meeting of February 2, 1911.

†See paper on page 190.

will be able to tell whether a patient can take an anesthetic.

Dr. Carr said he had used the term myocarditis in a broad sense. He fears it when there are certain symptoms, such as intermittent pulse, arcus senilis. It is a curious thing that if a nerve is too wet or too dry it will lose sensation. Spoke of the experience of dentists. This is, he thinks, the explanation of the action of water.

Dr. W. C. Gwynn said at Georgetown Hospital one-fourth grain of morphia with the one-hundred-and-fiftieth of atropia is used one hour before operation and then ether is given. *Dr. Eliot* says chloroform is always used in heart disease. He thinks it should be optional to the patient as to whether a local or a general anesthetic should be administered. He also believes that shock is due to the mental condition of the patient. He advocates chloroform in herniotomies. Had used quinine and urea, but found that he did not wait long enough; must wait at least half an hour.

Dr. Atkinson inquired whether quinine and urea were officinal.

Dr. James D. Morgan remembered some years ago using cocaine in a case of hemorrhoids and testified to its efficiency. A personal experience with cocaine had been very bad—great shock had followed.

Dr. John E. Walsh spoke of hypnotism having been used as anesthetic; had no experience with it. Thinks a general anesthetic is to be preferred to one of a local nature, and ether given by the open method is best; also in heart cases ether should be the choice.

Dr. Gwynn thinks that latent cases of tuberculosis are started up by ether, and thinks nitrous oxide and oxygen must be used in these cases.

Dr. Carr spoke of anesthetics in tuberculosis patients. The consensus of opinion at a meeting of the Climatological Society was that ether is the proper anesthetic. The tendency of the day is to use ether rather than chloroform. Cited a case where he had used a teaspoonful of ice as an anesthetic for an operation for umbilical hernia.

Dr. Kober spoke of hypnotism, and cited his experience in an operation for felon; there was no pain for twenty-four hours.

Dr. Gwynn thinks the specialist in tuberculosis should be the one to decide what anesthetic should be used in lung patients.

Dr. Eliot, in closing, said: Varick had ampu-

tated a thigh under cocaine, and reported the psychic effect upon the patient was such that he was ever afterwards deterred from performing major operations under a local anesthetic; abdominal section had been done under carbolic acid; umbilical hernia had been operated for under quinine and urea. In operating upon the rectum under chloroform or ether the mask must be removed from the face during the dilatation of the sphincter. Quinine and urea will occasionally be followed by slow healing. This has been shown to be the result of using a solution of too great a strength. Patients have been hypnotized in one city and sent elsewhere for operation.

In heart cases, opinions differ as to the use of chloroform; chloroform kills promptly, ether some days after by kidney or other complication. Uses chloroform exclusively when a general agent is required—very rarely uses ether. Thought surgeons were too timid in the matter of chloroform and ether and were becoming more so; they must be prepared to combat shock and assume responsibilities.

Analyses, Selections, Etc.

The Dangers and the Duties of the Hour.

H. A. Hare says that it is clear that in every well-equipped medical school students should be taught to hold in the highest honor pharmacological investigation, and opportunity should be offered those who so desire to delve into this mine of thought. They should also be taught that empirical methods should always be regarded with a certain amount of distrust, at least to such a degree that they will be forced to study them rather than to resort to them haphazard. Again, the physician should have a sufficient knowledge of chemistry and of the physiological action of drugs to prevent him from believing many of the seemingly attractive advertisements of the drug purveyor—at least until he has analyzed their character. Last of all, he must be assured that many of our most successful therapeutic measures rest upon empiricism at the present time, not only because the pharmacologist has not as yet "caught up," but also because physiologists, pathologists and bacteriologists have not as yet advanced their departments sufficiently to enable us to explain the action of certain remedies.

Indeed, one of the most remarkable things in medicine is the discovery of a multitude of invaluable means of treating disease, not by scientific research or deduction, but by a process of clinical experimentation and observation.

Experience shows that the laboratory pharmacologist when he is taken ill turns his back upon his theories and incontinently and voraciously swallows such expectorants or purgatives, or other medicines, as the lowly general practitioner may see fit to prescribe, because illness convinces him of the value of bedside experience; and his confidence is well-placed, for he gets well. It were better if some of the pharmacologists of the day would strive to be upbuilders rather than iconoclasts, since by this means they would more successfully advance scientific medicine, and what they had to say would be listened to with greater respect. The average man wants to be shown how he can improve, not how mistaken he is.

The present time is one in which the pharmacologist should not cast discredit upon empirical therapeutics, and the clinical physician should not cast discredit upon experimental pharmacology. Each should support the other and regard the results of each with respect and admiration: but, nevertheless, bedside therapeutics for the average medical student should take the foremost place and pharmacologic research should be considered of secondary importance. Even if the time should arrive when all our therapeutic measures have a pharmacologic foundation and every student has a clear conception of the scientific status of drugs, the man of bedside experience will still possess a priceless advantage which will make him of infinite value to all his clients because he will have come to recognize that disease does not follow hard and fast lines of science but varies in its manifestations as to the effect of drugs according to the systemic peculiarities of the individual who may be ill.—(*Therapeutic Gazette*, June, 1911.)

The X-Ray in the Diagnosis and Prognosis of Pulmonary Tuberculosis.

Adolph Hendrix, New Orleans, says that in reviewing statistics as to the value of sputum examinations, Hamman reports that, taken as a whole, about 50 per cent of patients in German sanatoria do not show the bacilli. Nagel reports bacilli present in 14.9 per cent of 1081

tuberculous patients, or in 1.4 per cent. of the incipient cases; also present in 38 per cent of the moderately advanced cases. These figures show conclusively that we must frequently make a diagnosis before the tubercle bacillus is found.

From the recent literature on the diagnostic value of tuberculin, Hamman and Wolman report 57 per cent of their patients positive to the cutaneous method. Sache, in a series of 165 cases tested by both conjunctiva and skin, reports positive reactions in the incipient cases to be 67 per cent. and 69 per cent respectively; in moderately advanced cases, 33 per cent, and 41 per cent, respectively, and in the far-advanced cases, 67 per cent by each method.

When we remember that a positive tuberculin reaction signifies the existence of a tubercular focus somewhere in the body without giving a definite idea of its position or extent, that it often fails in chronic cases, and is very often negative in very active cases, the fact is emphasized that many cases of pulmonary tuberculosis must be diagnosed by other methods.

These facts are mentioned not to belittle them in any way, but to draw attention to the fact that, aside from constitutional symptoms, our main reliance in the past has been placed upon physical signs.

Of the physical signs employed, auscultation ranks the highest in the diagnosis of pulmonary tuberculosis. Many diagnostics depend upon the presence of prolonged expiration, crepitant rales and jerky or cog-wheel breathing to diagnose incipient cases. Diagnosis can often be made in early cases by auscultation if the lesion is at or near the apex or near the surface of the lung. On the other hand, deep-seated foci may escape detection by physical examination. The mediastinal pleura, the root of the lungs—in fact, a large portion of the lung—cannot be examined physically, but can be by the X-Ray.

The X-Ray will reveal what is discoverable by physical examination in this disease and gives additional information. It acts as an eye which penetrates the entire thorax, demonstrating areas of congestion, isolated and conglomerate tubercles, gaseous areas, cavities, thickening and shrinking of the mediastinal pleura, enlarged bronchial glands. Early signs of infiltration are recognizable when the diagnosis is otherwise doubtful.

Physical signs, unless consolidation be present, tell little of the depth of lesions. Sometimes, difficulty is experienced in determining by physical signs between a displaced and a dilated or hypertrophied heart, the results of percussion being obscured by the morbid pulmonary changes. The stereoscopic method of skiagraphy demonstrates the extent of pulmonary lesions, including depth, and determines the location and size of the heart more definitely than any other known method of examination.

The value of the information given by this method in prognosis deserves consideration. The progress of the disease as shown by advancing caseation or by extension to new areas; on the other hand, the formation of fibrous tissue and encapsulation; the rapidity with which the formation of fibrous tissue occurs; and, as Turban and Rumpf believe, the extent of the disease. (outweighing all other factors) can be better shown by the X-Ray than by any other method of examination.—(*N. O. Medical and Surgical Journal*, June, 1911.)

Remarkable Ante-Mortem Rise of Temperature.

H. W. King, New Orleans, reports a case of tuberculous meningitis in which the temperature on the fifteenth day of illness reached 105.2 degrees F., with a pulse of 110 and respiration 46. Within the next two hours there was a decline of two degrees, though the pulse rate was increased to 128 and respirations had dropped to 36. For five hours, temperature (103 degrees F.), pulse (128) and respiration (36) remained unchanged, and then within the short interval of three hours, the temperature leaped to 106.5 degrees F., pulse 140, respiration 48. The sudden change was noted at 6 a. m., and three hours later, temperature was 107 degrees F., pulse 145, respiration 60.

From this hour, the temperature kept mounting higher. To avoid the chance of error in observation, several thermometers were used, all with the same result. At 1 p. m., the temperature was 107.8 degrees, pulse 170, respiration 76; and at 5 p. m., the temperature had reached 110.8 degrees. Forty minutes after this recordation the patient expired. A complicating terminal pneumonia hastened the end.

As a rule, in tuberculous meningitis, just before dissolution, the temperature sinks to 94 or 95 degrees, though there may be a hyperpy-

rexia. Osler calls attention to a case of Braumler's where the temperature rose just before death to 110.7 degrees.

The diagnosis of meningitis was based on the following facts:

1. The previous personal history of poor health and enfeebled constitution.
2. The illness, influenza preceding the general collapse which rendered the patient a fertile soil for tubercular infection.
3. The evidence of pulmonary involvement—persistent cough, great loss of weight and other physical signs.
4. The meningeal manifestations—cervical rigidity, Kernig's sign and clinical phenomena peculiar to meningitis.
5. The cyto-diagnostic evidence as revealed by examination of the cerebrospinal fluid—the amount of fluid—the clearness of the fluid—the high pressure at which it was obtained—the delicate, though firmly coagulated fibrin clot—the marked lymphocytosis, and Noguchi's test positive.
6. The death of the patient.—(*Ibid.*)

Mobilization of Ankylosed Joints by Operative Measures.

Ankylosed joints have been the bane of the surgeon from time immemorial, and even today one of the most difficult tasks a surgeon has to perform is to make movable a stiff joint. Even now, with improved methods of technic and a greater knowledge of the subject, the operator is compelled to admit that he has failed to accomplish his purpose. Murphy was the pioneer in this line of work in America, and has reported some remarkable cures. The underlying principle in the treatment of a stiff joint is the separation of the ankylosed surfaces and the interposition of a foreign material between the articular surfaces thus created. The adherent joint ends are separated by arthrotomy or resection, followed by the interposition of either a dead organic membrane or the transplanting of a pedicle of living tissue from an adjacent soft part. Of course, these methods are not applicable to every form of ankylosis. It is not indicated in multiple ankylosis, and if applied, the joints are to be attacked at intervals, and is certainly contraindicated in the multiple arthropathies, such as rheumatic gout, arthritis deformans, etc. Yet, even with all the contraindications and exceptions which can

be marshalled against the method, there are still a large number of stiff joints which call for this line of treatment, e. g., those following fractures. It is especially in this form of immovable joint that the greatest benefit has followed the employment of the breaking up of the ankylosis with the interposition of either a foreign animal membrane or the soft tissues from the individual.

According to Payr, the operative treatment may be divided into three phases: The exposure of the affected joint; the separation of the ankylosed parts; the measures to prevent re-ankylosis. This authority believes this object is best subserved by the interposition of living tissue. Murphy also prefers living tissue to a dead membrane. The flap may be muscle, fat, tendon sheath or synovial membrane. Any one of these tissues answers the purpose very well, but as a rule, the flap is composed of muscle and fat. The operator must be careful to securely attach the flap so that it thoroughly covers the raw end of the bone, else ankylosis may recur; and to prevent its displacement when the joint is moved. Mayo's operation for the cure of bunion is based on this principle.

Good results depend greatly on the after-treatment. When the skin has healed, passive motion should be instituted. Massage and electricity exert very beneficial effect. The chief factors entering into failure are infection and the tearing away of the interposed soft pad.

This operation has given excellent results in the hands of those who have resorted to it, and there is no doubt that it marks a distinct advance in bone surgery. For what is a patient or his friends more grateful than the restoration to function of a disorganized joint? The operation reflects great credit on surgery and even greater satisfaction to the patient.—(*Editorial, Maryland Medical Journal, March, 1911*).

Book Notices.

International Clinics. Edited by HENRY W. CATTELL, A. M., M. D. Philadelphia and London: J. B. Lippincott Co. Cloth, 8vo. Vol. IV. 1910. Price, \$2.50. Vols. I. and II. 1911. Price, \$2 Each. Each Volume Contains About 300 Pages.

International Clinics is a most valuable adjunct to the library of any physician or surgeon. Not only are the latest advances presented quarterly in as full detail as possible, but every

subject that is uppermost in medical thought of the period is discussed, either in the form of an especially prepared paper, or as the report of a clinical lecture, etc., by the best qualified talent.

Volume IV, Twentieth Series, 1910, which unfortunately seems to have escaped our attention until now, is filled with important articles, among which we may, for lack of space, especially mention only a few:—Ehrlich's New Preparation, Arsenobenzol ("606") in the Treatment of Syphilis; The Methods of Examining the Blood of Greatest Importance for the General Practitioner; Functional Tests of Cardiac Efficiency; Transfusion of Blood, Employing only Veins; The Technic, Aims, and Limitations of Spinal Anesthesia; Improved Esophageal Instruments; Hypnosis, Its Psychological Interpretation and Its Practical Use in the Diagnosis of Treatment of Disease; Refraction by the General Practitioner; Wounds by Fire-Arms, etc.

Volume I, Twenty-first Series, 1911, has as its leading article, The Spread of Pellagra throughout the United States; then follows a further contribution to the treatment of syphilis with Ehrlich's Dioxydiamido-Arsenobenzol. The Development of Sphygmomanometer and the Method of its Use, Some Recent Clinical Investigations of Poliomyelitis, Mosquito Work in the Canal Zone, and Progress of Medicine During 1910 are just a few of the other numerous matters considered.

Volume II, Twenty-first Series, 1911, likewise has its share of interesting papers, not least among which we note reference again to Ehrlich's "606", The Intravenous Administration of Salvarsan in the Treatment of Syphilis. However, the subjects already enumerated should prove sufficient as an index to the general scope of the series, a regular subscription to which will, we are confident, carry not many, if any, disappointments to the purchaser.

Collected Papers by the Staff of St. Mary's Hospital—Mayo Clinic—1905-1909. Philadelphia and London: W. B. Saunders Co. 1911. Cloth, 8vo. x. 668 Pages. 228 Illustrations. Price \$5.50 net.

Each of the papers contained in this book has appeared at one time or another in some medical journal or transaction, the greater number having previously been read by a member of the Mayo Staff of fourteen at St. Mary's Hospital before various medical societies during the period 1905-1909. The work is es-

entially surgical. The wide field covered by these collected papers is surprising, and while intra-abdominal conditions receive by far the largest share of attention, much important surgery of practically every other portion of the anatomy is discussed. There is not an uninteresting article in the volume, and the wide experience and general recognized ability of each of the authors makes the book valuable to the surgeon as an authoritative reference.

Principles of Public Health. By THOS. D. TUTTLE, M. D., Secretary and Executive Officer, State Board of Health of Montana. Illustrated. Cloth, 12mo. of vii—186 pages. World Book Company: Yonkers-on-the-Hudson, N. Y. 1910. Price, 50 Cents.; 10 Cents Additional for Postage.

Principles of Public Health is designed for use as a text in the grammar grades of public schools. The instruction given is in keeping with modern teaching, and, while here and there points are strained—possibly not unwisely so for emphasis to young children—on the whole, we find the book quite satisfactory, and probably the best we have seen for the purpose intended.

Compend of Gynecology. By WILLIAM HUGHES WELLS, M. D., Associate in Obstetrics, Jefferson Medical College; Assistant Obstetrician, Jefferson Medical College Hospital, etc. Fourth Edition, Revised and Enlarged. 153 Illustrations. Philadelphia: P. Blakiston's Son & Co. 1911. Cloth, 12mo. 290 Pages. Price, \$1 net.

A number of years ago, a compend for any department of medicine consisted solely of questions of the most general nature on the diseased conditions mentioned, and answers which were superficial and often too indefinite to be of special value. Wells' *Compend of Gynecology* is, however, "a gray horse of another color." It is "straight away" solid set matter—without loss of space for questions—and gives compactly but in easy style the essentials to be known about diseases of women. The limitations of the book preclude extended discussions, but the amount of information imparted in such small space will, by comparison, put many a more pretentious work to shame.

Golden Rules of Diagnosis and Treatment of Diseases—Aphorisms, Observations, and Precepts on the Method of Examination and Diagnosis of Diseases, with Practical Rules for Proper Remedial Procedure. By HENRY A. CABLES, B. S., M. D., Professor of Medicine and Clinical Medicine, College of Physicians and Surgeons, St. Louis, etc. St. Louis: C. V. Mosby Co. 1911. Cloth, 12mo. 298 Pages. Price, \$2.50.

This little volume is designed for, and will likely be of considerable service to the prac-

itioner for reference in cases of urgency. Each class of diseases is grouped in a separate chapter after the order of other books on practice of medicine, except that only important points of diagnosis and treatment are given—mostly in the form of reminders. Etiology, pathology, etc., are not dealt with.

A Treatise on Diseases of the Nose, Throat and Ear, By WILLIAM LINCOLN BALLENGER, M. D., Professor of Laryngology, Rhinology and Otology, College of Physicians and Surgeons, Chicago, New (3d) edition, thoroughly revised. Octavo, 983 pages, with 506 engravings, mostly original, and 22 plates. Cloth, \$5.50, net. Lea & Febiger, Philadelphia and New York, 1911.

This is one of the most exhaustive books on diseases of the nose, throat and ear that has been published in recent years. In the issuance of this third edition, the author has taken advantage of the opportunity offered to subject the book to a thorough revision, and in so doing, has made many important additions. Among other things, he has included a full description of Goldsmith's operation for closure of recent perforations of the septum. Vaccine therapy in the treatment of infectious diseases of the accessory sinuses, ear, throat and meninges is also given prominence. Illustrations have been increased by sixty new drawings and five plates, three of the latter being in colors. The volume will be of service primarily to the specialist as a convenient consultant in time of trouble, though the doctor, who does much of his own special work, or who has occasion to refer to an authority along this line, cannot do better than to have a copy of this book handy for use.

Memoranda on Poisons. By THOMAS HAWKES TANNER, M. D., F. L. S. Eleventh revised edition by Henry Leffman, A. M., M. D., Professor of Chemistry, Woman's Medical College of Pennsylvania, etc. Philadelphia: P. Blakiston's Son & Co. 1911. Cloth, 16 mo. 161 pages. Price 75 cents, net.

The necessity for an eleventh edition is sufficient evidence of the popularity of this little manual. It is small enough—about the size of an ordinary prescription pad—to be easily slipped in the pocket and examined *en route* to emergency cases. Hasty reference to it, especially when responding to such disturbing calls, will many a time serve a good purpose,

relieving embarrassments and steadying the physician's confidence in himself.

Treatise on Diseases of the Skin—For the Use of Advanced Students and Practitioners. By HENRY W. STELWAGON, M. D., Ph. D., Professor of Dermatology, Jefferson Medical College, Philadelphia, etc. Sixth edition, thoroughly revised. 8 vo., 1,195 pages, 289 illustrations and 34 full-page colored and half-tone plates. Philadelphia and London. W. B. Saunders Company, 1910. \$6 net. Half Morocco, \$7.50 net.

The new edition of this standard work has given the opportunity of omitting much unnecessary and obsolete matter; of permitting rewriting many subjects, as pellagra and sporotrichosis, and adding much that is new, as gain-mite and brown-tail moth dermatitis, and various tropical diseases, namely, gangosa, tropical ulcers and a ulcerating granuloma of the pudenda. The use of carbon-dioxide snow as a means of treatment is described; and twenty-five new illustrations have been added to the volume. Taken altogether, Stelwagon's is very helpful to the physician in this, the most baffling domain of his daily work. M. W. P.

Editorial.

Therapeutic Efficiency.

The terms "therapeutic nihilism" and "physical therapeutics" are frequently and fluently used at the present time, so much so that we hardly realize that they are characteristic of the present era in medicine, and indicative of the existing state of progress.

When laboratory methods of testing drugs and the experimental study of their physiological action came into vogue, we began to question the value of any medicament which could not be standardized by laboratory methods. And when a large number of prominent medical scientists allowed their doubts of drug-action to make them averse to exhibiting drugs, the term "therapeutic nihilism" was coined. It is a useful expression, but implies that there is a destructive as well as progressive tendency in this condemnation of drugs. We shall probably have to admit for a long time to come that there are drugs which are of clinical value, although this value cannot be demonstrated by laboratory methods alone.

The development of "physical" or "physiological" therapeutics is another phase of the same subject; for, although all treatment of disease is, in a sense, physiological, even though no rational basis can be maintained, yet there are certain agents and effects which are more clearly understood as founded upon well-known facts of physiology.

In the very broadest meaning of the term, with the facts and theories in mind as to the secretory relation between all parts of the body in health and disease, it is plain that *antisera* may be regarded as physiological remedies. It is even more simple to include with these the animal extracts, such as *thyroid* and *suprarenal* extract.

It is fair to consider blisters, poultices and hyperæmic methods in general as physiological. *Hydrotherapy* is generally listed as one of the "physiological," or rather "physical" agents. And here I think it is plain that a distinction should be drawn between the meaning of these two words, the latter being less scientific and embracing light, heat, water, electricity, exercise, these being grouped, not because there is any essential connection between them on the therapeutic side.

The answer to the scientific denial of therapeutic efficiency of drugs is the popular turning to the physical agencies; the truth in science and the practical in therapeutics is found between the two extremes. No drug should be discarded until found inert in human physiology and pathology; and no physical method should be approved unless it can be shown to be of definite clinical value.

By this kind of discrimination we shall purge our therapeutics of much that cannot be defended as scientific, and which cannot in fact be differentiated from that which has always been and is still the method of the ignorant and the charlatan.

We are glad to recognize that much progress has been made in this direction, and that not only have mineral and vegetable principles been fixed in their range of natural application, but also hyperæmia, hydrotherapy, radiotherapy, electrotherapy, serum-treatment and organotherapy have been rescued from the hands of the ignorant and criminal, and raised to a high plane of scientific and ethical usefulness.

Recent work in the various lines of physiological therapeutics is such as to lead one from

the shadows of therapeutic nihilism out into the sunlight of a great hope, that there shall ultimately be no disease which shall not through the use of natural synergists and antagonists be at last eradicated from the human individual and race. CHARLES M. HAZEN, M. D.

The Virginia State Board of Health,

After a short meeting in Richmond, July 10, 1911, adjourned to meet at Catawba Sanatorium the next morning. The object of the meeting at the State Sanatorium for tuberculosis patients, was to give the members of the Board an opportunity to see what work had been accomplished there, so that they might be better prepared to ask the next General Assembly of Virginia for an increased appropriation for enlarging accommodations at this, one of the most worthy institutions in the State.

A large amount of routine business was transacted, including appointments for many County Boards of Health. Dr. John J. Lloyd, Jr., was also appointed resident physician to Catawba Sanatorium, *vice*, Dr. W. E. Jennings, resigned, and Dr. C. H. Fowlkes, a graduate of the Medical College of Virginia in 1910, who has since served as interne at the Johnston-Willis Sanatorium, Richmond, was appointed assistant resident physician.

Members of the Board in attendance on the meetings were, Dr. Rawley W. Martin, president; Dr. William M. Smith, secretary; and Drs. Stuart McGuire, George Ben. Johnston, Lewis E. Harvie, J. H. Dunkley, T. C. Firebaugh, S. W. Hobson, O. C. Wright and J. B. Fisher. Dr. Ennion G. Williams, State Health Commissioner, and his assistants were also present, and gave reports of the splendid work which had been done by them.

Catawba Sanatorium.

At the recent meeting of the Virginia State Board of Health, it was decided to limit the stay of patients at the Sanatorium to six months, unless the resident physician should for some reason deem it advisable to extend this time. The reason assigned for this action of the Board is that a patient who has had the benefit of the treatment and instruction for six months is in a position to continue it at his home and thus effect a cure or at least hold the disease in abeyance, while his place at the Sanatorium may be given to another who in turn may be cured or much benefited. In view of the large

number always waiting for admission, the justice of this decision, which at first glance may appear a little heartless, is apparent.

Miss Ida Jean Lucas of Kentucky, a graduate of the Memorial Hospital Training School, Richmond, Va., has been appointed head nurse for the Sanatorium.

The dendrologist of the United States Forest Service has recently been at the Sanatorium giving advice as to the beautifying of the grounds and care and preservation of the trees.

Montgomery County Medical Society

Is the latest acquisition to the county societies of Virginia. It was organized by the physicians of that County at Blacksburg, Va., June 30, 1911, with Dr. H. D. Ribble, Blacksburg, president; Drs. W. A. Wilson, Radford, and W. H. Edmondson, Christiansburg, vice-presidents; and Dr. A. M. Showalter, Cambria, secretary-treasurer. Plans of interest were discussed, and it was decided to hold the next meeting in the Agricultural Building at Blacksburg, August 2, 1911.

The subject for consideration at the next meeting will be Hookworm, it being the purpose of the Society at this time to study the disease from a practical standpoint. Dr. P. B. Barringer, President of Virginia Polytechnic Institute, and ex-President of the Medical Society of Virginia, will give a microscopical demonstration of the eggs, worm, etc., together with some negative specimens.

This society represents the profession in a section of the State including a number of representative physicians, and we predict for it a bright future.

Efficient Government Officer Assailed.

While Dr. Harvey W. Wiley, pure food expert and chief of the Bureau of Chemistry of the Department of Agriculture, may possibly have been guilty of a slight indiscretion in violating "the letter of the law," by paying larger salaries than those allowed by the Government, to secure the services of experts, there hardly seems reason for the recommendation recently made President Taft by a committee on personnel of the Department of Agriculture, that Dr. Wiley "be permitted to resign."

Dr. Wiley's reason for this increased pay was not for personal gain, but merely to obtain expert talent, in which thing it appears he

should have some discretionary power, and especially so, in view of the fact that similar acts, running into thousands of dollars, are reported to have been transacted by another Government official without condemnation.

Dr. Wiley has done an excellent work in unearthing and exposing frauds and impostors in his execution of the pure food laws, and has naturally made many powerful enemies by these exposures. They, it would seem, are in some way, "the power behind the throne," planning his overthrow.

We feel sure that in his answer to these charges, Dr. Wiley can explain his position so that President Taft will not yield to the desire of Dr. Wiley's enemies to have him ousted.

School of Tropical Medicine and Hygiene in New Orleans.

With a view to meeting the demands of the United States Government in educating its physicians in hygiene and treatment of the tropical diseases imported more especially into the Southern States, the Medical Department of Tulane University of Louisiana, at the beginning of the next session, "will inaugurate laboratory and systematic courses in Tropical Medicine, Hygiene and Preventive Medicine." It is the hope of those interested that sufficient money will be donated to enable the endowment of such a department, with the ultimate idea of having a full school of tropical medicine and hygiene. To attain this end, liberal contributions will be necessary to meet the expense of securing a capable medical staff, maintaining supplies, suitable equipment, etc. When the funds in hand will justify such expenditure, occasional expeditions will also be made to the tropical countries easily accessible from New Orleans, for the purpose of studying the diseases on their native soil.

Contributions should be sent to the Dean of the Tulane Medical Department, P. O. Drawer 261, New Orleans, La., who will also be glad to furnish any information wished.

We heartily endorse the establishment of this department by the Medical Department of Tulane University of Louisiana, and hope it will meet with the success which it merits.

The American Medical Editors' Association.

At their forty-second annual meeting in Los Angeles in June, elected the following officers

for the 1912 meeting: President, Dr. Walter Wyman, Surgeon-General U. S. Public Health and Marine Hospital Service; Vice-Presidents, Drs. Thomas L. Stedman, New York, N. Y., Walter Lindley, Los Angeles, Cal.; Secretary-Treasurer, Dr. Joseph MacDonald, Jr., New York, N. Y.; Executive Committee, Drs. W. C. Abbott, Chicago, Ill., C. L. Stevens, Athens, Pa., and G. H. Kreidler, Cincinnati, O.

The meeting was pleasant in every detail. In addition to a scientific program which included a number of papers, some of which had to be read by title owing to the absence of the authors, the usual banquet was held on the first evening, at which many guests including the lady members of the editors' families were present.

Central State Hospital.

The building which is being erected at this State Hospital for the criminal insane is expected to be completed by the middle of August or first of September. It is to be a two-story building of about twenty-five rooms, and will contain all necessary conveniences.

St. Luke's Hospital, Richmond, Va.,

Contrary to its former custom of being closed for the month of August, now remains open the year around, and during the absence of Dr. Stuart McGuire for his usual summer vacation, will be under the charge of his associate, Dr. W. Lowndes Peple.

The Hygeia Hospital, Richmond, Va.,

Of which Dr. J. Allison Hodges is physician-in-chief, will, as usual, be closed for the month of August.

Dr. W. H. Higgins, formerly on the medical staff of Drs. Barker and Thayer, at Johns Hopkins, but more recently of the Clifton Springs Sanitarium, has recently become a member of the staff of the Hygeia.

New City Hospital for Gaffney, S. C.

Little more than a year ago, a number of public-spirited citizens of Gaffney, S. C. decided to have a City Hospital, and entered into the work with such enthusiasm, that the first part of this month a splendid hospital, modern in every detail, was opened for the use of the residents of Gaffney and neighboring towns in Cherokee County. There are ac-

commodations for twenty-five patients, though more could be treated in case of emergency with little inconvenience. A charity ward is included in the hospital.

While only five physicians are connected with the hospital at this time, patients will be received from any reputable member of the medical fraternity. Dr. R. T. Ferguson is secretary-treasurer of the Board of Directors.

The Latane Anti-Tuberculosis League,

Winchester, Va., so named after the late Dr. S. P. Latane, has about completed arrangements for an active campaign against the spread of tuberculosis, and has engaged the services of Miss Anne Carson of Riverton, Va., as nurse in charge, beginning the first of August.

Medical Officers of Staunton, Va.

At the annual meeting of the City Council of Staunton, the first part of this month, Dr. Kenneth Bradford was elected city physician, and Drs. K. Bradford, J. B. Catlett and H. H. Henkel members of the City Board of Health.

Dr. E. T. Brady,

Who has made his home in Abingdon, Va., for many years, is in Philadelphia, taking a special course of study in X-Ray work with Dr. Manges at Jefferson Hospital, and in skin diseases with Drs. Schamberg and Stelwagon. Upon completion of his studies in the Northern cities, he will probably locate in one of the larger cities in this State to practice his specialty.

Dr. Brady is one of the most prominent doctors in this State, being an ex-President of the Medical Society of Virginia, and for many years a member of the Medical Examining Board of Virginia.

The Virginia Pharmaceutical Association,

Met in Roanoke, Va., July 11-13. In addition to having a successful and interesting meeting, the members were delightfully entertained by the citizens of that place. They decided upon the innovation of holding their meeting next year on a steamer, which they expect to charter for a trip to Bermuda, and named the following officers for that meeting: President, W. L. Lyle, Bedford City; Vice-Presidents, C. D. Cox, Roanoke, and C. D. Owens, Lynchburg; Secretary, E. L. Brandis, Richmond, and Treasurer, H. S. Ely, Suffolk.

Drs. W. Brownley Foster, Health Officer of

Roanoke, and Ennion G. Williams, State Health Commissioner, were among those to address the Association.

Loudoun County Medical Society.

As we go to press, we are informed that the doctors of Loudoun County have organized a Medical Society, which in point of age and the worth of its members is a rival of the Montgomery County Medical Society.

The first regular meeting will be held at Hamilton, Friday, August 18, 1911, and the following have been elected officers: Dr. N. G. West, Leesburg, president; Drs. E. H. Heaton, Waterford, and T. F. Keen, Hamilton, vice presidents; and Dr. John A. Gibson, Leesburg, secretary-treasurer.

King's Daughters' Hospital, Staunton, Va.

A very handsome X-Ray outfit has just been installed at the King's Daughters' Hospital in Staunton, by Drs. T. M. Parkins, M. J. Payne and J. F. Armentrout, thus offering residents of that vicinity the advantages of electrical treatment without resort to hospitals in the larger cities.

Obituary Record.

Dr. George Holman Snead,

Of Fork Union, Va., died July 1, 1911, aged seventy-nine. He was a graduate in medicine from the University of Virginia, and was the first physician at Fork Union Academy. He served on the Board of Conscripots on the Confederate side during the War between the States, later resuming the practice of medicine. After a number of years spent in the practice of this profession, he entered the ministry, serving churches in the neighborhood in which he was raised.

He is survived by a widow and several children, one of whom is Dr. Nash P. Snead, of Cartersville, Va.

Dr. John M. Phipps,

Died at his home at Rural Retreat, Va., June 17, 1911 from cerebral hemorrhage. He was born in Grayson County, Va., June 26, 1865, and was educated at the public schools. Upon completion of his academic studies, he took up the study of medicine, graduating from the Medical College of Virginia in 1887. He was a member of the Medical Society of Virginia.

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Original Communications.

DIET—A PLEA FOR ACCURATE FOOD THERAPY.*

By PHILIP S. ROY, M. D., Washington, D. C.

Mute and still, by night and by day, labor goes on in the workshops of life. Here an animal grows, there a plant. The wonder of the work is not less in the smallest being than in the largest.—Rubner.

In discussing feeding, we have five foods to consider—fats, proteids, carbohydrates, water and inorganic salts. In the usual diet list the inorganic salts are furnished to the system in sufficient quantities; therefore, our attention has to be turned to the other four foods.

No one can intelligently feed without knowing the relative proportion of proteids, carbohydrates, and fats required to maintain the body strength, and no one can intelligently decide the amount of water for his patient without calculating the loss by the lungs and skin as well as by the kidneys. In the ordinary processes of feeding, about 100 grams of fats should be given a day, 100 grams of proteids, and 300 grams of carbohydrates. This will give 2,500 calories, or heat units, to the system daily.

Probably another more definite way of looking at the matter is by taking the body weight at what it should be for the height and age of the person. For illustration, a male five feet, eight inches in height and 35 years old, should weigh about 165 pounds, and the number of calories he needs for each pound should vary from 14 to 20, according to the amount of work he is doing. For a woman, the average weight for five feet, eight inches, would be about ten pounds less than this. No one can do a large amount of physical work on 14 calories to the pound. He may maintain fairly good health and do a considerable amount of

mental work on this basis, but if he is required to be actively physically engaged, his heat units must range between 18 and 20 to the pound.

Another definite way of determining food value is to estimate the calories regardless of proteids, carbohydrates, and fats, and then determine the amount of nitrogen eliminated. The nitrogen output by the urine being about one gram to six proteid, will readily show you whether sufficient proteid is being used.

In considering the question of giving water, we must never lose sight of the fact that about 24 ounces of water is lost every day by the skin as invisible perspiration, and about one pint by the lungs. Another point, also, has to be considered, that the burning of carbohydrates, fat, and proteids in the system, furnishes it about 400 cubic centimeters of water a day.

Many of the processes of metabolism are today as mysterious to us as they were to the ancients, though we have made vast and important strides in the last fifty years. We know that the end products of carbohydrates and fats are water and carbon dioxide, and the proteid during metabolism becomes urea, carbon dioxide, and water. But, between the time the food is taken in and the formation of these end products there are many points in metabolism that are still beyond the knowledge of the physiological chemist. Indeed, we do not know at this time whether our food after being taken in is first vitalized before it is used by the tissues as food, or whether the food is used by the system in the form of dead tissue.

There seems to be a general impression now that a large part of the nitrogen of the proteid food is promptly converted into urea and is eliminated before becoming a part either of the living proteid or circulating proteid of the body—in other words, is used as dead tissue.

Of course I am discussing the feeding of adults. Infants, the first two years of their lives, require from 45 to 60 calories to the pound;

*Read before a meeting of the Medical Association of Northern Virginia and the District of Columbia, at Herndon, Va., May 17, 1911.

and from two years old to ten or twelve years of age, the calories should be 40 to the pound—double the quantity required for the adult—and in this connection I would like to state that bacteria that break up the protein molecule in milk produce toxins that seem to be almost harmless to the adult, but exceedingly poisonous to the young. Quite a number of experiments have been made on puppies and dogs. Puppies have been poisoned by the milk that the old animal seemed to thrive upon. I think this is an important point in the feeding of children.

Another point I wish to make is with regard to giving distilled water. Distilled water has a low osmotic pressure and is exceedingly injurious on this account to the epithelial cells of the intestinal tract. There is a spring in Germany called the Gifbrunnen, a poison spring, that is practically distilled water.

Everyone who wishes to feed scientifically must study the value of foods with as much care as he studies the dose and medical value of drugs. He must keep in mind the food value of all the usual foods that are used which will enable him in a few minutes to calculate for his patient what quantity of each food should be taken in order to keep up the bodily standards of health.

With these preliminary remarks, I wish to call attention to feeding in some diseases and conditions of the body. For many years it had been thought that acute fevers, such as typhoid, malarial, and pneumonic, fever of the eruptive diseases of children—indeed, all acute febrile conditions—greatly lowered the powers of digestion. Many laboratory experiments have been made in recent years, and the results of this laboratory work have been collected in a most valuable paper by Dr. J. B. Nichols, of this city, showing that proteids, carbohydrates, and fats, in a large per cent. of the cases of acute febrile conditions, are digested and absorbed within ten per cent. of the normal. I do not think a more valuable paper has been added to our knowledge of feeding in disease than this one by Dr. Nichols.

When one feels that he can feed his typhoid and pneumonia patients food with impunity, when it is prepared in the proper way, I think he has overcome one of the great difficulties in the cure of these diseases. In pneumonia the most difficult question in feeding is not the power of digestion, but feeding without produc-

ing violent, spasmodic attacks of coughing, which will not only exhaust the patient, but cause vomiting of the food. This, I believe, can be overcome in a large majority of the cases by feeding slowly. I often make the nurse take one hour in feeding 300 calories of food to a pneumonia patient.

I will now try to illustrate the importance of diet by considering the manner of feeding in a few of the medical diseases. No subject has been more discussed in the last few years than intestinal autointoxication, and much that is vague has been said. There are two other forms of autointoxication which I will not consider at this time. One is histogenic autointoxication. For illustration, where the nucleins are destroyed and decomposed into uric acid, into purin bodies, xanthin, hypoxanthin, oxalic acid and these substances are formed in excess in the blood, we find present the uric acid diathesis of arthritism. Then under histogenic autointoxication also comes acid autointoxication and others. A second group of autointoxications are organopathic, which are autointoxications proceeding from faulty action of the kidney, the liver, the thyroid gland, the parathyroid, the pituitary body and suprarenal capsules.

GASTRO INTESTINAL AUTOINTOXICATION.

In gastro-intestinal autointoxication, we have largely to deal with the protein molecule. This molecule is broken up not only by the digestive ferments, but by the bacteria, and let me say here that it is a great mistake to think of digestive enzymes as occurring only in the intestinal tract. There is hardly a digestive enzyme that is not found in other portions of the body. This is particularly true, probably of lipase.

I will not go into the endless products that are formed in the process of the digestion of the protein molecule, but will only call attention to the fact that there are acid, fatty and aromatic groups formed during the breaking up of the protein molecule, and it is the qualitative and quantitative changes connected with this digestion that brings about gastro-intestinal autointoxication. It is not within the limits of this paper to discuss the processes by which we diagnose this faulty condition in the digestion of the proteid molecule, but each year the physiological chemist is giving us more definite means of diagnosing this disease.

Now, the diet in this disease is a lessening of

proteids, a lessening of fat, and maintaining the body nutrition by giving carbohydrates. We do know that fat increases the tendency to putrefactive processes in the digestive tract when this faulty digestion of the proteids exists. I might suggest one way in which it does this. Fats seem to lessen the flow of hydrochloric acid in the stomach, and hydrochloric acid plays a most important part in intestinal antiseptics. I would suggest in intestinal auto-intoxication, to reduce the protein in-pot to 50 grams a day, and the fat to some point between 30 and 50 grams, keeping up the body nutrition with an increased quantity of carbohydrates. One of the most useful of the carbohydrates is rice, it seeming to produce a larger quantity of lactic acid than most of the carbohydrate foods.

GOUT AND NEPHROLITHIASIS URICA.

I will group these two conditions together, because their dietary is practically the same, and the faulty metabolism in both is largely unknown to us. We have two great sources of uric acid, one the uric acid formed within the body itself, called endogenous uric acid, and the other uric acid derived from the nucleinic acid and the purin bases of the food, called exogenous uric acid. This much we do know about endogenous uric acid. We know that the body is capable of reconstructing the purin nucleins from material that does not contain the latter. Von Noorden says, "It is exceedingly doubtful whether any of the purin bases of meat or any of the nucleo proteids ingested contribute in any way to the building up of the body nuclein." In gout and nephrolithiasis urica, the food, as near as possible, must be based upon a purin-free and nucleinic acid-free diet.

At one time, Haig stated that eggs contained the purin bodies. This has been found to be a mistake and gives us a valuable protein food in these cases, as do milk, cheese, and many of the nuts. Peas and beans contain the purin radical, and should be eliminated from the diet list, also asparagus and mushrooms. I will not go further into the diet list of these two diseases, for I feel that they are very familiar to all whom I am addressing.

I wish to call attention to one point in the medication of nephrolithiasis urica. We wish as much as possible to prevent the formation of uric acid concretions in the pelvis of the kidneys, and this is accomplished by keeping the urine in its highest capacity for holding

uric acid in solution. *At one time, we laid great stress upon alkalies, particularly those of potassium and soda, without thinking of the great danger we were running in making the urine alkaline in these cases, for we were practically adding another danger to our patient's condition. If the urine is kept alkaline for any length of time, there will be a deposit of the phosphates converting the uric acid stone into a phospho-uric acid stone. There is one drug in this condition the value of which I do not think has been usually considered, and that is the carbonate of lime. The carbonate of lime will combine the phosphates in the intestinal tract, preventing an excess of the monophosphate of soda being formed. This monophosphate of soda makes the urine neutral, thus endangering the precipitate of the urates in the kidneys. By preventing the formation of the monophosphate of soda, the natural acidity of the urine is maintained by the diphosphate of soda, which is our most reliable means of keeping uric acid in suspension and preventing its deposit in the kidneys.

UNDER NUTRITION.

I do not feel that the physician gives sufficient attention to this subject in feeding. While I know we have many cases of over-feeding, I think quite a large per cent. of our patients, particularly women, will be found to be under-fed. Many women, fearing to increase their weight, will be guilty of under-feeding, while in others it is due entirely to nervous conditions, producing a loss of appetite. I do not know any condition that requires increased nutrition more than what is commonly called nervous dyspepsia. If you will go over the diet list of these patients you will find they are nearly always under-fed, and instead of lessening the food, it should be increased, and with the increase of food and general improvement of the system that follows, the endless symptoms of dyspepsia disappear. I have found very useful in these cases, from a therapeutic standpoint, the use of tincture of belladonna and bromide of soda in moderate doses before meals. These drugs lessen the sensitive condition of the stomach and enable the patient with greater ease to partake of food.

In under-nutrition, we can only definitely arrive at a diet list by making the patient carefully keep a list of foods that have been used in a week, and then calculate what would be a maintenance diet for him (and by a main-

tenance diet I mean the diet that is necessary to maintain the system in a state of normal nutrition), considering the age and height of the person and the amount of work he is doing.

What I have said in regard to under-nutrition could be as well applied to fattening cures. Fattening cures are needed in cases of inanition and under-nutrition. I mean by fattening cures the proper method by which the body weight may be brought to its highest standard from all physiological standpoints.

I have mentioned nervous dyspepsia. There is another condition that calls for fattening cure which I think should be mentioned—exophthalmic goiter. Exophthalmic goiter is due to the hyperthyroidism causing excessive oxidation. If these patients are given complete rest, or, the “rest cure” of S. Weir Mitchell, a large per cent. greatly improve.

It will probably be interesting to you to know that Mitchell never wrote a book by the title “Rest Cure.” The book in which he deals with his method of rest cure is called “Fat and Blood.”

REDUCTION CURES.

I can not in the short time that I will give to this subject, do more than call attention to some important points. After 50 years of age, 15 or 20 pounds of additional weight to the body in most cases does not call for reduction. Fifteen or twenty pounds above the standard in young people, is a matter which should be called to their attention, and warning be given them that they should not allow their weight to increase too rapidly. All reduction cures must be based upon a definite maintenance diet. Calculate what a person should take in a day for his height and age and the work he is doing, and then calculate the amount of food he is consuming. He should be taught what small additions to the maintenance diet, will increase the bodily weight. Two hundred calories a day beyond maintenance diet will increase the bodily weight some 15 pounds a year.

In starting the reduction cure our calculation of food, should not be made upon the weight of the person at the time we start reduction, but upon what his weight should be, and the maintenance diet for that weight. For illustration, if a man 35 years old, five feet eight inches tall, weight 190 pounds, comes to you for reduction, your calculations should be for a maintenance diet at 165 pounds, for

proper weight. If you wish to go below the maintenance diet, you should not, at first, go below four-fifths of the maintenance diet. Test this effect upon your patient, then if occasion requires, a reduction of two-fifths or three-fifths may be made below the maintenance diet, but this is rarely required.

One other point: if, after we have carefully used all dietary methods, our patient does not lose weight, we may feel reasonably certain that there is a condition of hypothyroidism, and a small quantity of thyroid extract can be given without danger—I would say from three to four grains a day. I have only discussed the diet in reduction cures. Of course there are other factors that play an important part. The next most important is muscular exercise. Massage in their cases is practically of no value, and this is equally true of sweat baths. They only rid the system of water, which is restored in a very few days. Reduction cures are required in quite a number of diseases. The three that I will especially mention are heart-disease, arterial sclerosis and gout. Many cases of valvular diseases of the heart rapidly improve when the excess of adipose tissue is removed, and many cases of arterial sclerosis where the person is far above the normal weight are greatly helped, not that the blood pressure is lowered to any great extent in many cases, but the demands upon the arteries are lessened.

We know how common it is in gouty cases to have valvular lesions, but in our reduction cure in these cases, the question of reducing the meat and other purin foods should not be considered. After we have reduced our patient we can then better regulate his diet without any danger of weakening his tissues and producing a worse condition than before our treatment.

One word about feeding in dropsy. These rules hold good, regardless of the cause of the dropsy: reduce the proteids to 50 grams daily, the chloride of the sodium to the minimum, also the water.

I thank the Medical Association of Northern Virginia and the District of Columbia for the honor of the invitation to talk on this matter before them. There have been so many points of interest left out that I feel that those which have been included constitute but a small part of what should have been said.

1200 Massachusetts Avenue.

THE ECONOMIC PHASE OF HOOKWORM DISEASE.*

By W. A. PLECKER, M. D., South Hill, Va.
Field Sanitary Inspector, Virginia Department of Health.

It is not alone upon the natural resources of soil, forests, minerals, waterways and climate that our state and nation must depend for their real strength and prosperity, and for their standing amongst the peoples of the world.

The old Romans knew well the force of the adage, "*Mens sana in corpore sano*," and strove in every way possible in extending their power and dominion to watch carefully that the individuals of their army and nation were possessed of sound minds in sound bodies.

Today, when the business world is engaged in a strenuous struggle for supremacy, and when every department of life is in the midst of the sharpest competition, there is no place in the fore-front for physical, and still less for mental weaklings.

The agricultural interests comprise the real foundation of our wealth and prosperity, and the agriculturists themselves, the back-bone of our nation's strength.

Our cities are being constantly recruited from the youths of the farms. These readily become leaders in every department of business and thought.

It requires no argument to prove that we have no resources that should be more carefully preserved and guarded than the strength and virility of our young rural population.

If, then, we learn that we have at work, just at that point, a cause, insidious, constant, powerful, sapping the strength and vitality of our farmers' boys and girls, ought it not to arouse to effort the State, the medical profession, and all others interested in the welfare of our people?

In uncinariasis we have just that powerful, widespread cause at work.

Its point of chief attack is precisely where we can least afford the slightest manifestation of weakness. It is our farmers' children who, when this disease is present, are always injured, at times irreparably. The saddest feature of the whole condition is the fact that in localities of the South, and even of Virginia, the cause is so widespread and insidious that the parents of these young victims do not realize

that their children are subnormal in bodily and mental development.

Because these poor anemic children, undersized, weak and timid, are yet able in a way to mimic the manner of those that are healthy and vigorous they refuse to believe that they are in need of medical and preventive treatment.

These poor, weakened, undersized parents, who bear in their own bodies the marks of former hookworm infection, calmly argue that they have had these "stomach worms" with them all the while, and that they are still alive, and that they "reckon there is nothing wrong with their children." They will, however, freely admit that both they and their children have suffered much with ground-itch, the initial lesion of the disease. Fortunately many, but not all, of these children, when they cease to go barefooted, and to acquire new infection, recover to such an extent that they become useful, and even leading citizens.

Studying this disease from an educational standpoint in the four counties of Southside Virginia in which I am working, I find an extremely serious phase of the subject. The brain suffers with every other portion of the body from the dwarfing effect of the secondary anemia resulting from hookworm disease. The infected children, if they go to school, are unable to fix their attention upon their studies, and to grasp an idea without having it repeated over and over. My duties have carried me into many of these schools, and I find that even the excitement of a lecture illustrated with stereopticon pictures cannot prevent these weak ones from yielding to fatigue and reclining on the desk in front. Teachers have told me of the verification of my challenge to show them the duller pupils and the ones demanding the most of their effort, yet making the poorest progress, when I had selected by microscopic examination those suffering with hookworm disease.

The rural schools in which these examinations have been made show about 50 per cent. of infections, many, of course, being mild. The teachers who have replied to my inquiry on this point agree exactly with my own estimate that the State is losing 20 per cent. of the teaching power of these instructors, and consequently that proportion of the money supplied by taxes for school purposes in these counties.[†] The next

*Read before the Southside Virginia Medical Association, Petersburg, Va., June 13, 1911.

[†]Since reading this paper I have received some valuable statistics from teachers of Richmond county through Dr. A. C. Fisher, of Emmerton in answer to

loss to the State is in the character of its citizenship, these children leaving school and entering upon their life duties with the minimum amount of education which their opportunities permit of. How many financial enterprises could stand to be robbed of one-fifth of their net income and survive? But here the story is only begun, for in reality the children found at school are there by natural selection. The more severe cases of the disease either never enter school, or soon becoming discouraged by their poor progress, drop out entirely. I may add, too, that their departure is not hindered by the suffering teacher.

In one badly-infected portion of my territory there live twenty families with thirty-five or forty children of school age. This whole community supplies just two pupils, little girls, to the nearby school. In not one of these families is there the slightest semblance of toilet arrangements beyond that supplied by the everywhere convenient brush. In that neighborhood within a radius of half a mile I found three patients, bed-ridden with hookworm disease, two being adults. Not one-fourth of these adults possess even the rudiments of an education. My arithmetic fails in the attempt to compute the terrible incubus to the progress of the State, which such a mass of incompetent citizens constitute. No other condition of those families is possible until they are induced to put into practice means to prevent the gross infection of the soil around their homes with the *uncinaria ova* and larva. I regret to say that my most strenuous efforts in that neighborhood have been unavailing. The attempt will be renewed, and ulti-

questions sent to teachers of schools in which the children were examined microscopically. One teacher replies as follows:

1. How many are in grades below their average of age?

Ans. Thirty out of the whole number of forty.

2. How many have failed to advance with their classes to higher grades?

Ans. About thirty-five failed to advance.

3. Do you find these children less able than others to concentrate and hold their minds upon the subject?

Ans. I most decidedly do.

4. Do they show other signs of early fatigue? If so describe.

Ans. They do. They soon show signs of fatigue and become indifferent to their lessons and surroundings. They stare vacantly at objects.

5. Do they require more effort from the teacher to impart to them instruction?

Ans. They certainly do.

6. If your work as teachers is less efficient on account of the presence of this disease to what per cent.?

Ans. About 60 per cent.

7. What number of the children have been treated, and result?

Ans. All been treated except one. All decidedly benefited except two.

The seven teachers who report declare that from 20 to 60 per cent. of their labor is lost on account of the presence of hookworm disease the average of all being 40 per cent.

mate success is hoped for through the creation of a healthy surrounding public sentiment.

The loss to the actual earning power of our people will be illustrated by the example of a father and two half-grown sons, who were induced to consult me by the owner of the land upon which they live. They were all heavily infected, the boys having swollen, dropsical faces, bloodless lips, and the yellow tallow complexion of typical dirt-eaters. These two boys for farm work should be easily equivalent to one man, but were entirely unable to perform manual labor. Of course they had never darkened the door of a school-house. The father himself could perform but half of a man's work. This father was therefore absolutely losing three-fourths of the income which the labor of these three should have brought into the family. Is that not a terrible tax levied by ignorance?

This, too, in our beloved Southland, where we may rightfully boast of possessing the purest strain of the original Anglo-Saxon Americanism, yet unmingled with the lower horde of immigrants now flooding other portions of our land!

Sanitary education constitutes the one hope of eradicating this disease. This may readily be accomplished when the people are thoroughly aroused. The physicians naturally constitute our most valuable helpers in this work of sanitation and treatment. There are other than purely humanitarian reasons why doctors should constitute themselves what their name implies, teachers of the people. Every country physician in the infected portion of the land has within the bounds of his practice numbers of families, now practically non-producers, beyond earning the most meager livelihood, and frequently not even that, without the charity of neighbors. These families may be treated at slight cost and induced to use preventive measures. Their children, instead of being drones upon society, are capable of wonderful development if given a chance. Such families may be transferred from the physician's charity list to the other, more profitable one. Teachers and school officials naturally constitute our next most important corps of educators in sanitary matters. These will be abundantly repaid for all of their effort in seeing greater reward for their labors in the rapid advancement in learning of now hopeless pupils.

Pastors of our country churches as they go

in and out amongst the people have a splendid opportunity of putting into practice the example of our Saviour in helping the weak and discouraged. Many of these faithful men are now actively aiding in this educational work, and are urging these people to make use of the simple sanitary measures which alone will bring success. No other feature of their pastoral work will do as much to elevate the moral as well as the physical and mental condition of their charges.

Then comes the large and ever-growing number of intelligent and interested people, who are improving their own sanitary surroundings, and aiding the work of reaching those less fortunate.

Above all of these, and laboring in a wider field, we have the press, now changed from the original attitude of jesting at a condition that then seemed incredible, to one of active co-operation. Now we find the magazines, the city dailies, the country weeklies, the medical, religious and agricultural journals, all joining in the great crusade against filth and preventable disease.

Towns through their mayors and councils, are taking this matter up, and are one by one passing ordinances requiring the erection and proper maintenance of sanitary privies. A drive through the country where public sentiment is aroused, shows it dotted with new structures of the same sort.

What we want now is "a long pull, a strong pull, and a pull all together," and we will see with improved sanitation, the arrest and execution of this great "American Murderer."

THE PRESENT STATUS OF SURGERY OF THE BRAIN AND SPINAL CORD.*

By A. W. FLY, M. D., Galveston, Texas.

A critical review of the progress of surgery of the brain and spinal cord impresses one with the fact that the work of the past decade has been vast and brilliant, yet as it is not my purpose to detract in the least degree from the high measure of praise and commendation due to surgery and surgeons of the decade that is gone, still we must admit the explorer of all new lands, unguided by experience, commits error apparent to his retrospection. So surgery, in its new work, has with enthusiasm advanced some doctrines which its present wisdom and

experience must lead it to discard. The collection of data must precede the classification and establishment of any true science or enunciation of fixed principles arising therefrom. These years which have gone before, therefore, have been invaluable in the collection of vast elements of advanced truth.

Recent years must be considered as time most wisely spent in the critical analysis of the facts already adduced, and in the deduction of sound principles for future work. This is the time of reckoning, and we should now be able to, in a measure, weigh our discoveries, and ascertain the true relation of surgery to the problems of human life and happiness. The result of these deliberations has demonstrated to us many excesses of our zeal, and led to a decided trend toward conservatism in surgery, not that conservatism, however, which but masks the face of ignorant inactivity, but a truer and higher conservatism which puts life first, then function and, finally, form.

To-day, we are emerging from a tidal wave of brain surgery. There is scarcely a pathological condition to which the brain is subject that has not been submitted to the trial of operative surgery for its relief. Medical skill had for years exercised its best efforts for the cure, or control, of the diseases of cerebral origin, and, in a considerable number of cases, with only limited success. With great expectation and hope, therefore, the profession turned its thought to the possibility of relief by surgical measures. In this department of work have been enlisted the services and talents of many of the most eminent neurologists throughout the world. These laborers have brought to us knowledge of inestimable value.

Cerebral localization and an accurate understanding of much of the physiology and physiological anatomy of the various portions of the brain are achievements which have placed medicine upon a scientific and an accurate basis in the diagnosis of cerebral pathology, and shall forever stand as a brilliant record to the credit of brain surgery. Our efforts, viewed from a therapeutic standpoint, have not been so gratifying. With the possibility of relieving the distressing and, heretofore largely hopeless cases of epilepsy, for instance, how eagerly and even enthusiastically it was embraced! The theory that all epilepsy of cerebral origin was attributable to local excitation, and the removal of the offending cause would insure a disap-

*Read before the State Medical Association of Texas, at Amarillo, Texas, May 9-11, 1911.

pearance of its ensuing clinical manifestations, seemed indeed logical, both in its premises and its conclusions. All forms and degrees of epilepsy, whether general or focal, have been, therefore, subjected to varied operative procedures. The temporary benefit following nearly all operations, for a short time led us to believe that we finally had found the happy solution of this vexatious problem. But, for permanent results, we have learned that our power was limited in many cases.

In general epilepsy, it was soon demonstrated that little is to be expected from surgical intervention. This, however, has occasioned no great surprise, as little rational hope was ever entertained for this class of cases. Even in the focal, cortical epilepsy, however dependent upon distinct and localized lesion, susceptible of removal, the history of our work shows some lack of the permanency in results. As Eulenberg says: "By the excision of an area of the cerebral cortex, the attacks may be made to stop for some time, but they are apt to return after a while." Von Bergman asserts that "Only those cases of cortical epilepsy are cured by trephining which are due to tumors, especially cysts, which are often the result of intra-meningeal exudations, due to traumatism over or within the circumscribed motor area." Nancrede also affirms that his experience, like that of Horsley, Keen and other surgeons, has demonstrated a lack of permanency in results, and looks upon the removal of the discharging lesion in cortical of Jacksonian epilepsy as a merely palliative procedure. He further observes that "The earlier the operation is done after the disease has become established, the longer the immunity," and adds that: "It is possible that if the trephining were resorted to early, the operation would probably prove curative, if a reliable method were used to prevent the inevitable scar and the adhesions between the brain and its meninges." The universal experience, however, demonstrates that after degeneration of nerve substance has set in, it is too late for a permanent cure by surgery. We may remove the primary cause, but the degeneration, which is secondary, and the efficient cause of epilepsy, is just a little beyond the control of present methods. One vastly important observation, however, has been impressed upon the surgeon's mind by his experience in the surgery of epilepsy, viz: that a large percentage of the cases of epilepsy are

due to remote traumatism of the skull, either unrecognized at the time, or, if recognized, improperly handled. The significance of this observation should not be overlooked in dealing with any injury of the head, and I confidently believe that the true conservative surgery of traumatic epilepsy is radical surgery of the trauma. With Lanphear, I can quite agree in the aphorism: "The way to cure traumatic epilepsy is to prevent it."

The operative treatment of imbecility and idiocy has even been less successful than in epilepsy. As Dana has aptly said: "This operation was originally devised on the theory that, by cutting open the skull of the microcephalic child, opportunity was given the brain to grow." This theory, which was never substantiated by facts, and never held by any experienced neurologist, has been, of course, overthrown. What the operation does is this: it has a profoundly disciplinary effect upon the idiot. The operation of craniotomy upon children in institutions attracts attention of nurses and all of the medical officers, and children get more care and more stimulating words of help in various directions. I repeat, therefore, that it is, in my opinion, largely due to its pedagogic influence, that so many cures are effected in the case of children. I believe, however, in view of the hopeless and practically helpless condition of these unfortunates, their lives being a burden to their friends and a mere blank to themselves, I believe, I say, that surgery has been a veritable Godsend to these children. Yet I fear that we are prone to lose sight of the moral side of this question. Senn calls attention to this in very forcible language: "I am free to confess that I have never been able to muster my courage to attack the skull of a poor microcephalic child, because I have always regarded the operation as useless in promoting brain development. The responsibility of the surgeon is not limited by the defective mental development of the child, nor the importunity of the parents demanding the operation at all hazards. The surgeon should stand guardian over such a charge, mindful of the limits of the art of surgery. Have we a right to estimate human happiness? The driveling idiot has many enjoyments that you and I know nothing of. His responsibilities to God and man are limited, and his existence on earth is a long, happy dream, which only ceases when the soul leaves the imperfect body and returns

from whence it came—where mental distinction is unknown.” The rule for operative interference in these cases is covered by Mr. Champneys. He says: “The number of cases in which operation is justifiable, or desirable, must be determined, generally speaking, by the ascertained risks of the disease against the risks of the operation; the former must exceed the latter, before the operation should be justified.” Life must be reckoned as the first object of our care, to be hazarded only on most mature indication.

In spinal cord surgery, some very brilliant advances have been made. The surgery of this part of the body has been wonderful, when we consider the short time in which it has all been accomplished. Just what is the relation of surgery to the spinal cord is, in my opinion, still an open question. The uncertainty of the differentiation of the various forms of its disease, its manifold aspects, clinically, render a scientific and fixed stand impossible in the light of our present knowledge. The mass of clinical observations in the treatment of the spinal cord which have been scientifically recorded have been from those treated surgically. A corresponding amount of evidence regarding the non-surgical treatment is not obtainable. True, the spinal cord was treated medically for many years, before surgery of this part of the body was ever introduced. At that time, however, the pathology of the conditions was practically unknown, and the differentiations were so obscure that accurate data was rarely had, and retrospective diagnosis and records were not entirely to be depended upon.

Thus, it will be seen that, in surgery, we are sifting the gems from the sands we have shoveled in the past years, and separating the true from the false doctrines in modern surgery. And it is becoming to the medical profession to view our present status and utilize our mass of accumulated knowledge, rather than wander into new fields of investigation. But few of us ever originate anything new. Science is studied abstractly, else perversions may arise. It is thus step by step “till the end is reached—the crowning point—a new idea. The utilitarian age comes in and applies.”

The modern hospital is the outgrowth of this idea, made safe by science, from a surgical standpoint, far safer than any home. Hospitals tend to concentrate talent. Talent, when brought in contact, tries the old, and leads the

new. Hence, we look to those for our gleanings. Still, I am very willing to admit that many new impulses are given by individual exertion. For example: Sims gave a new impulse to gynecology when he used an iron spoon from a kitchen; out of it grew Sims’ speculum, out of which grew many valuable operations to return suffering women to the world.

Every well regulated town should have a hospital, however small, many a life might be saved. What would a man give in exchange for his life? The city surgeon will scarcely appreciate the difficulties surrounding his country cousin. The laboratory led the way to true progress. No organ in the body can escape the trained surgeon’s knife.

The old hospitals were merely hotbeds for all forms of bacterial life; deadly germs lurked in every nook and corner. Since laboratories have shown this habitant, how different now! Medicine as a science is but an infant, and can trace its lineage only a few years. Superstition through long ages held progress in bondage. The most natural things in the world are simple laws that govern organic life—plant life and animal life—reaching up to the crowning work of God—man life. All obey the same laws of change. The surgeon has long since ceased to be called an operator, under the guide of a more learned man, but now must add unto his skill as an operator a knowledge of all life’s laws, both health and disease. This is the modern surgeon.

In this connection, I wish to speak of the lack of general recognition that is given to the medical profession for the discoveries made by them in the field of brain surgery, as well as other lines. A distinguished statesman, from New York, once said: “We cannot but think that the discoveries and improvements in medical practice, which are now being enjoyed, were dearly bought, if the medical profession, in their onward march, have left behind their sense of civic obligation, and their interest in the general public welfare. We cannot accuse you of utter neglect of your duty to the country, yet we cannot keep out of mind the suspicion, if your professional work in exposing evils were more thoroughly supplemented by labor in the field of citizenship, these evils would be speedily corrected. If members of our profession were oftener found in our National and State assemblies, ready to advocate the adoption of new discoveries which

you have demonstrated to be necessary, and to defend your profession against impracticability, the prospects of bestowing upon your fellowmen the ripened results of your professional labors would be brighter and nearer."

I do not believe it detracts from a man's professional usefulness for it to be known that he has a knowledge of something besides medicine. I do not believe it detracts from his ability to pursue scientific investigations for him to rest himself from his work by occasionally thinking of the affairs of State, literature and business. I do not believe that the medical man who confines himself to medicine, or to one branch of it, and who shuts himself in from the world and from the consideration, in moderation, of his duties, is as successful a practitioner, as successful an investigator or as successful in his business as the man who is broader in his views. Exclusive working in a single line cannot but have a narrowing effect. We need in surgery not only science, but philosophy and business. I am a firm advocate of dignity, and have always been in a position to appreciate the duties of a doctor, but my observation has been that we physicians pay too little attention to citizenship, and too little attention to the business part of our work. The consequence is, that the doctor, while he may be respected in his community for his professional attainments, has little stand in the business world, and his views have little weight with the public. I believe that the medical man who adds patriotism and business qualifications to his professional knowledge is a better doctor, a better citizen and of more value to his locality than the recluse who prides himself on knowing nothing of affairs, and would sooner live on crusts than have it known that he would venture to let it be known that he would demand his rights. Throughout the country, the large cities expend vast sums of money in caring for the unfortunates in hospitals and asylums, patients who require the best that advanced surgery and medicine can give. I contend that no men are as capable of proportioning that money in the channels in which it will do the most good, and be most economically expended, as educated men with business qualifications.

In our professional walk, we see the world as it is, not as it should be. We are in closer touch than any other calling with humanity, and get our experience of the condition of citi-

zens from the poorest as well as from the richest. We thus have a special advantage in forming opinions on many economic questions of the day not enjoyed by others. Let us, then, add to this, the business qualification of the average layman, let us use every effort to convince an enlightened community that we no longer are a part of a mystic cult, but that we are men like other men. We have a business founded upon science; let us perform our duties to our country as citizens, and exercise the business tact we owe our families and to ourselves, and then we will occupy the position before the public that belongs to the ideal physician.

So, in conclusion, I will say that, in the surgery of the brain and spinal cord, the surgeon has been truly marvelous. Yet, we have made mistakes; no true progress is ever made in life without mistakes along the way. But we, as physicians, must be aggressive if we would have the world reap the benefits of our progress.

PERSONAL EXPERIENCE WITH SALVARSAN.*

By S. S. GALE, B. A., M. D., Roanoke, Va.
Surgeon to Lewis-Gale Hospital.

This paper is based upon a series of twenty cases, 15 of which came under my care, and 5 under the care of Dr. Lewis, at the Lewis-Gale Hospital, since February 2, 1911.

These cases were selected only so far as they presented no contraindications to the treatment of salvarsan, all forms of syphilis being included.

Diagnosis was made on the history, physical examinations, and results of the Wassermann test in about one-half of the cases.

Technique of the Administration.—All injections were made intra-venously in the median basilic vein. In right-handed people the left arm was used, and *vice-versa*. The field of operation is prepared with benzine and tincture of iodine. The anesthetic in most cases was one per cent. solution of Novacocaine, and in a few cases quinine and urea was used. The salvarsan was dissolved in 30 to 40 cc. sterile physiological saline solution, which is prepared from chemically pure sodium chloride and distilled water, and poured into a graduated sterile glass stoppered bottle, of 300 cc. capacity, containing about 50 sterile glass beads; then 0.6 gramme of salvarsan is added.

*Read before the Southwest Virginia Medical Association, at Roanoke, Va., June 20-21, 1911.

By means of vigorous shaking the substance is dissolved. To this solution 23 minims of 15 per cent. fresh sodium hydroxide solution are added. This will cause a precipitate to form, which is again dissolved by vigorous shaking. Then the clear yellow solution is increased to 300 cc. by adding sterile physiological saline solution. Should the solution not be quite clear, another 1 or 2 minims of the sodium hydroxide should be added. Each 50 cc. of this solution now contains 0.1 gramme salvarsan; therefore, 150 cc. contains 0.3 gramme; 200 cc. 0.4 gramme, and 300 cc. 0.6 gramme of the salvarsan. The hotter this solution is made, the less precipitate will occur.

In our first cases we only gave 0.5 gramme doses, but later we have used the maximum dose of 0.6 gramme. All of these larger injections have been given to men, women, requiring relatively smaller doses. The solution is poured into an ordinary saline infusion bottle, preferably one with an outlet at the bottom. An India rubber tube is attached to the bottle and a canula is inserted at the end of the tube. The flow of the solution is controlled by a clamp. A few drops allowed to escape in order to remove the air from the tube and canula, after which the latter is inserted into the vein. The flow of the solution into the vein is regulated by raising and lowering the infusion bottle. The wound is sponged out with normal saline solution to remove any salvarsan that may have escaped into it while introducing the canula into the vein. It is then closed with a continuous catgut suture, and a dry dressing applied.

Following the injections, the patients are kept in bed in the hospital from two to three days, and then allowed to resume their usual occupations. So far as possible, all cases have been kept under observation and the Wassermann test made in order that recurrences might be recognized as early as possible, and further treatment promptly instituted. In only one case, so far, has the second dose been administered. Case 1, which showed beginning secondary manifestations, was subjected to a serologic examination six weeks after the administration of salvarsan with a negative reaction.

Reaction.—In from one to two hours after the injection, there was a rise of temperature, varying from 99 to 102 F. In most cases patients had from one to two chills, varying in intensity and depending upon susceptibility.

There was some slight acceleration of pulse, and nausea and vomiting occurred in nearly every case, the vomitus being of a peculiar yellow color, which closely resembled the injected fluid. These symptoms usually all subsided in from 8 to 10 hours, and the patient then complained of hunger.

Salvarsan is indicated in the treatment of primary, secondary and tertiary syphilis, and the accompanying symptoms, as well as for preventive measures. An important field for the employment of the remedy is afforded by cases of lues maligna and obstinate affections of the mucous membrane. Particularly favorable results have been obtained in those cases which were refractory to iodine and mercury. It is also reported, although we have had no experience along this line, that salvarsan has been employed with remarkable success against the syphilis of pregnant and nursing women, as well as in hereditary lues. According to present experience, this medicine can only be used with a prospect of success in incipient tabes, early paralysis, and epilepsy of syphilitic origin, if the treatment is commenced immediately after the earliest symptoms appear.

Contra-Indications.—This drug is contra-indicated in serious disturbances of the circulatory system, advanced degeneration of the central nervous system and foetid bronchitis, as well as in cachexia. Unless a direct consequence of syphilis, it is also contra-indicated in patients who exhibit a pronounced idiosyncrasy against arsenic. On the other hand, according to Lesser, Michaelis, Spiethoff and others, diabetes, nephritis, and tuberculosis are not contra-indicated. Some cases of visual disturbances after employment of salvarsan have been reported. The greatest precaution should therefore be observed in the treatment of existing ophthalmic disorders, although it is likely that the eye disturbances are due to lues and not to salvarsan.

My report of cases shows one primary, in which no Wassermann was made, and two secondary cases. In one case, no Wassermann test was made; in the other, a Wassermann was made six weeks after the injection, and was negative.

There were 15 cases of tertiary. In eight of them no Wassermann was made; in seven, the Wassermann was made and found to be positive in each case. There were two cases in which the Wassermann was made and was negative.

One of these cases had a stricture of the rectum, and gave a negative Wassermann. A section later showed this case to be carcinoma of the rectum. The other case was negative to Wassermann test and did not give a clear history of syphilis, but had been diagnosed as such by two doctors. This patient wanted to get married, and was anxious to take salvarsan as an extra precaution.

Our case reports, therefore, show that in seven cases in which the Wassermann test was made, in each case where there was a history of lues, the Wassermann confirmed the diagnosis. In the other two cases where there was no clear-cut history, the Wassermann was negative, and still further confirmed the diagnosis. One of these negative cases subsequently proved to be carcinoma of the rectum. In some of these cases, in which no Wassermann was made, there were manifest lesions present, thus excluding the necessity of the sero-logic test. From a clinical point of view, improvement in the local and general condition of the patients began abruptly and was most marked and far reaching in every instance but one.

Our experience corresponds with the observations constantly being reported by other observers. Chancres, mucous patches, ulcers of the throat and skin lesions, gummata, painful syphilitic processes, and old tubercular syphilides all disappeared as if by magic. Cases that would not respond to mercury or iodide of potash promptly responded to this drug. Cases which were becoming progressively worse under mercury and iodide of potash, have completely cleared up with one injection of salvarsan, and the patient has gained in weight. In only one case of cerebral syphilis has there not been any improvement.

Complications.—In this series of cases there were no complications or untoward symptoms.

Conclusions.—We are convinced that it is an important therapeutic addition in the treatment of syphilis. In all cases where visible lesions were present, complete disappearance followed the injection, and marked improvement in the general condition of the patient was constant. The drug is indispensable for patients who do not tolerate mercury. It is too early yet to state whether a complete cure of syphilis and absolute immunity from recurrences in the majority of cases can be expected. Our cases have not been under observation long enough yet to justify the belief that one injection will effect

a complete cure in all cases. As Geraghty and Keidel state, in their most excellent article in the *Old Dominion Journal of Medicine and Surgery*, May, 1911, "Salvarsan is without doubt of equal value with a long course of mercury and iodides, so far as the cure of lesions goes. It has, moreover, a very great advantage of simplicity of administration, and causes the lesions to disappear with great rapidity. It also saves the patient from the damage attended by luetic toxins during the period necessary for the control of the disease by means of mercury."

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SOME OF THE ACHIEVEMENTS OF THE NINETEENTH CENTURY.*

By SAMUEL LILE, M. D., Lynchburg, Va.

The century just passed has been the most wonderful the world has ever experienced; it has wrought such changes that if our grandfathers could return they would swear that the face of nature had been changed and the habits of man completely perverted.

While this is true, we most assuredly face the dawn of a still newer and more wonderful era, and one which is destined to be more extraordinary in every way. The new accomplishments to be wrought during the twentieth century will reveal unseen, unheard of, and unthought of things, and things now considered impossibilities.

As we become more and more freed from the thoughts and superstitions of the ancients, just so rapidly do we achieve extraordinary victories in the scientific world, for as these superstitions and doubts are dispelled, man's fear to attempt the invisible grows less.

Even to-day, there is no place too remote, or too sacred, for man to attempt its conquest. He has already, in our own time, robbed the earth of her deepest secrets and attempted to do likewise with the heavens.

Henry Armitt Brown, a distinguished lawyer and orator of Philadelphia, some thirty years ago, said: "Man has secured and chained to his service the elemental forces of nature. He has made the fire his steed, the winds his ministers, the seas his path-way, and the lightning his messenger. He has descended into the bowels of the earth and walked in safety on the bottom of the sea. He has raised his head

*Address of the President before the South Piedmont Medical Society, at Lynchburg, Va., April 18, 1911.

above the clouds and made the impalpable air his resting place. He has tried to analyze the stars, count the constellations, and weigh the sun. He has advanced with such astounding pace that, breathless, we have reached a moment when it seems as if distance has been annihilated, time made as naught, the unspeakable spoken, the intangible felt, the invisible seen, the inaudible heard, and the impossible accomplished."

With all this before him thirty years ago, what would this same speaker say or think could he view the present landscape o'er? He would see the mighty air-ships plowing the heavens, hear voices and recognize them across the continents; he could sit in his own home and hear the grand operas ground from a machine, and being sung by the greatest artists; he could send or receive messages over the wonderful wireless telegraph for almost unlimited distances; he could speed in a steam or electric car from place to place over ordinary dirt high-ways, and, further, he could take a voyage to the bottom of the sea, and do many, many other equally marvellous things, with all of which we have grown almost familiar, but what could or would he think?

We have just began to knock at the doors of a new century, which is destined to be fuller of greater achievements than the one just ended, and with all this blaze before us illuminating the present, and casting its reflections on the past, there is not one spark telling of the future; the mysteries of life remain as unfathomable to-day as they did in the time of Adam, and as we now understand the matter, will ever be the great unfathomable.

When we compare all these great achievements of modern times with many of the past, we can see that virtually we live in an evanescent age, we do things but we do not do them substantially, not one-half as much so as did the ancient Egyptians, Grecians and Romans, for they builded for future generations in all the arts and sciences, and even in this twentieth century we turn to their literature with the profoundest respect. Then, too, they builded monuments, public highways, public buildings, baths and streets, which show almost a perfect state of preservation, although a Caesar and Pompey held sway in their buildings, walked or rode over their highways, and bathed in their pools. And then, too, Anthony and Cleopatra,

of whom we have all heard much, sported in and around these same places.

The great sewerage system of Rome was constructed by Pontifex Maximus, in the fifth century, before the Christian era, and Pliny, in writing of it some five hundred years after its completion, stated that it was a marvel how such a structure could have remained in such a perfect state of preservation so long, but what would he think to-day, were he to return to his old haunts and find that same system of sewerage still doing duty, and still being sufficient for the present Eternal City, without additions, extensions or improvements? Well might we ask, will any engineer or builder of even the forthcoming twentieth century, leave such a monument?

When Æsculapius, the God of medicine, was no more, the Athenians had a monument erected to his memory, a statute, marvelous in its handy work, and beautiful in proportions. Many years thereafter, when Athens was no longer the seat of learning for the world, and Carthage had been subjugated by Rome, the latter city was being besieged by a scourge, when the old superstitions of the then ancient Grecians arose in the breasts of the then modern Romans, and in order to allay the dreadful scourge, they sent to Athens and had this statue of Æsculapius brought to Rome, with the hope of its power to allay the awful epidemic. It proved, as the Romans thought, all powerful, for the demon promptly vanished. While this statue was being transported from Athens, a huge serpent was seen to escape from it, and landed on the single island in the river Tiber. Deeming this an omen of good import, the Romans erected a statue in the shape of a staff encircled by a serpent, and called it the staff of Æsculapius, a portion of which remains to-day.

Æsculapius is said to have been killed by a thunder bolt from Jupiter, because Pluto complained that his cures were becoming so wonderful that it was lonesome in Hades. Will any member of the present medical profession ever have such a charge brought against him? Never, unless we, through the teachings of Mrs. Eddy, learn that there is no disease and nothing material in life, and be able to convince the world at large that such is a fact. Then, and only then, will we be endangered by Jupiter's thunderbolt. Mrs. Eddy has attempted to erect an everlasting monument, but it is

destined to be only a fallacy save in name. But the good women of the last century begun the erection of a monument, to be completed in this—unless the curse sent upon the builders of the tower of Babel be hurled against them—which will be more lasting than the Roman sewerage system or the pyramids of Egypt.

They have been and are being now taught, especially among the educated classes, that to bear children is too great a drudgery, and the hardship imposed thereby is unjust. In consequence, when a young woman marries she is a graduate, or thinks she is, of the school which teaches how to prevent conception, as well to rid herself of it in case prevention fails. Furthermore, in the minds of these women, to have babies, sips too strongly of the life of the lower animals, and to nurse a baby, should one by accident escape the remedies used for prevention, is strictly bestial; hence, for their own reason, the baby is destined to take its food from the hand of a servant and from a bottle.

If one baby should by chance be born, eternal vengeance is sworn against another. Besides, often through fear of becoming a mother among those legitimately entitled to be, brings about a condition of disregard for the husband's sexual desires, thus driving him to other quarters for gratifying his animal passion. This condition will surely develop discord, terminating in a miserable condition at home, or in divorce.

We must not forget the difficulties under which an only child exists. Scientists have proven that to be an only child places that child at great disadvantages both as to himself and his progeny. They have proven, too, that an only child in a family is fifty per cent. more apt to be a neurotic than he would be if he had brothers or sisters, and his morbidity is very much increased.

How little do our women appreciate these facts, for, ignorantly, let us believe, they are building such monuments as time cannot efface. While these thoughts and teachings may not be real monuments, they are certainly mental pictures which are being painted into the gray matter of the present generation, to be handed down to the next, and the next, and probably to all future generations, carrying with them the additional idea that to be the mother of their husband's children is not a God-given duty, but is only an act of barbarism, and a near approach to the life of the lower animals.

It only remains for the women of this twentieth century to follow the teachings of the last, regarding the propagation of species, for man to drift down and down to a lower level than he has been for many centuries, for truly it is to woman that man owes his present state of civilization.

Women have grown more and more independent of the men, no longer looking to them for support and protection, but are rapidly assuming that independent air known only to the men in the past. They are competing for such labor as was in the past allotted to men only, thus compelling the latter to go idle, or labor for far less salary. The women can secure such work because they have no dependents, hence can work more cheaply; while the men have dependents and must have or demand good salaries, else their dependents suffer for the necessities of life.

We now hear from almost every quarter of the globe the clamor for the rights of suffrage, through the *new women*, the suffragettes, or the suffragists, as they now prefer to be called (a society of childless married women and old maids), who are insisting on equality with men. If this state of affairs continues to exist, we need not be surprised before the ending of another year, to hear the tocsin sound the glad tidings of great joy from this sect, that the women will no longer be the housekeepers for the men, but will demand that this order of business be changed, and the men become the guardians of the household for themselves and their wives, should there be any of the latter.

The familiarity now existing or rapidly developing between boys and girls, young men and young women, following the same occupations and intermingling as one common gender, is fast destroying that profound respect which men have ever held for their opposite sex; in consequence, marriage is decreasing and divorce increasing *para passu*.

Unquestionably the nineteenth century has developed a new lot of professional men who call themselves doctors, many of whom finding a livelihood difficult to earn during their first years of work, have laid aside the high estimate formerly placed on the honor and character of the profession, and have adopted the nineteenth century plan of getting money. So rapidly has this idea been ingrafted into the

minds of people, that many doctors have resorted, and still resort to the practice of criminal abortion for the paltry sum of a few dollars, just to carry out the new plan of getting money. So rapidly have these things developed that to do criminal practice is almost legal. Our general, State and municipal governments apparently wink at such practice; if not, then it would seem that all that is necessary is to incorporate into a stock company, which will permit almost anything to be done, provided it be done in the name of a corporate body. For instance, buy an old farm for which you pay five thousand dollars, capitalize it for one million dollars, plot it, laying off streets, plazas, parks, etc.; then advertize it and tell in glowing terms of the wonderful things to be done there, the number of *projected* railroads, factories, hotels, etc.; then sell the stock to an unwitting and credulous public, put the money in your pocket, and leave for another prospective city building site. You, as the promotor, and float-er, and founder of the great city *to be* on this old farm, have done nothing wrong; if any harm has befallen anyone, the corporation has done it and not the seller of this valuable stock.

Further, our governments allow the advertising doctor quacks—another of the get-money class—to advertize a guaranteed cure for consumption, indigestion, rheumatism, piles, or any disease which the world knows to be incurable, and this is one other legitimate corporation act of the century just passed, and will continue, I fear, through the present century to an exaggerated degree.

The Milford bard has said, "Time, like death, is an impartial conqueror, the monuments of genius and the arts fall alike before him in the path of his irresistible might," but such thoughts and actions as have had full sway in the last century and now being assiduously cultivated in the present time cannot efface, nor death destroy, without total destruction of that portion of the human race believing and teaching such.

Reverting to the question of the professional criminal abortionist, another relic handed down to the present time, his work is destroying the chastity of our young unmarried women, by teaching them that they can indulge their animal desires without fear of pregnancy.

Woman was created to be man's bosom companion, to elevate him above the lower animals, to keep guard over him lest he forget and retro-

grade, and to be the mother of his children, thus populating the earth and fulfilling God's command to his first people, "Be fruitful and multiply." Then if they will not have babies what part of God's blessings can they hope to enjoy after this life's fitful end.

We have learned what malaria and yellow fever are, what produces them and how to combat or prevent them; also the actual cause and course of typhoid fever and pneumonia. The bacillus of chancre has been isolated, and Ehrlich has given us his "606" for its immediate cure or eradication. The X-ray has given eyes to see or enabled us to photograph almost any part of the interior of the body, and define what we see with definite skill. Beside these, we know something about pellagra, and hook-worm, and the latter we cure with pretty definite certainty.

Tuberculosis has been rendered no longer the dreadful disease of the past, not through internal medicine, however, but through hygiene. And, too, we are rapidly beginning to know that it is not necessary to chase all over the country seeking a cure for T. B., but that the medical trinity, rest, fresh air and good food, will accomplish as much in one locality as in another, and that chasing is not only bad, but dangerous.

The microscope and the laboratory have added much to our knowledge of the heretofore unknown, and the former has become almost a *sine qua non* in diagnosis.

The last century has begun to teach us something about the new vaccine treatments, the antitoxines and bacterins, which it has left for the present century to perfect, and which I have little doubt of its doing.

But for the assistance of the microscope, we would be as much in the dark as to diagnosis as we were forty years ago, and this should be our strongest fort, for without knowledge of diseases and their causes, we are truly practicing empiricism, and experimenting on each and every patient whom we attempt to treat.

We should make every effort to become strong diagnosticians and rid ourselves of empiricism, thus enabling us to feel that we are true scientists.

We have practically learned something as to the internal, as well as the external secretions of the glands of our bodies, and their importance; also that appendicitis, cholecystitis, cholelithiasis, stone in the bladder, pus in the tubes, ovaries, or their adnexa, and empyema are not

diseases amenable to the curative effects of internal medicine.

We have also learned that nearly all diseases are self-limited, and that save something like a half dozen, nature is the curative agent, and the doctor only the pilot, who guides nature in her effort to effect a cure.

Let us, then, as a band of doctors, by our example of honesty and fidelity of purpose, build mental pictures sufficiently strong to impress our young men and women through all time. Teach them to be honest, for "an honest man is the noblest work of God." Teach the childless married woman that she cannot be happy, unless becoming a suffragette, and later receiving the right of suffrage, can make her so. The old maid too must be instructed along the proper lines in her field, and, as she cannot become a mother honestly, she must refrain, but becoming a suffragette, with all the rights supposed to be carried thereby, can only serve to add to her already unhappy state.

Teach the young men that to have gonorrhea is not a manly honor or a reward for well doing, but is a nation-wide curse, for it is perhaps the most widely spread of all the infectious diseases, and is classed as the chief cause of the majority of the diseases peculiar to women. The man may have an acute attack, even several years before he gets a wife; he marries the woman of his choice, who is to him the sweetest woman in all the world, yet very likely before the end of the first year of conjugal bliss passes, a miscarriage takes place (if she happens not to be one of the new women, or her remedies of prevention have failed). This is followed by an acute ovaritis, salpingitis, metritis, or general pelvic inflammation, any one of which may be, and usually is, traceable to an old latent gonorrhea, one supposed to have been cured years ago; nor do we doctors instruct the husband sufficiently as to the serious consequences of such disease. When such is taught strenuously, no more will the would-be bad boy boast that he would rather have an attack of gonorrhea than an ordinary bad cold.

Teach the professional criminal abortionist that he is a murderer and cannot hope to forever escape the fangs of the law by his mendacity, and that the watchful eye of every high-toned physician is trained upon him, then we can say with one accord:

"Let us all be up and doing, with a heart for any fate,

Still achieving, still pursuing, learn to labor,"—
but not to wait.

ILEUS.

By WILLIAM FRANCIS WAUGH, A. M., M. D.,
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(Medical Department, Loyola University).

In the *Semi-Monthly* of January 27th Dr. Gale contributes a paper on Ileus, which seems to be of more than usual interest. The problems which Dr. Gale discusses and which are introduced indirectly into his paper are among the most important before the medical profession.

He enumerates the various forms of ileus, or rather of intestinal obstruction, and by the vagueness of his diagnostic suggestion shows the difficulty and frequently the impossibility of making an accurate diagnosis without invading the abdomen. This is much more nearly a correct picture than the one given by the text-books, which diagnose each form of intestinal obstruction with a precision which is found exclusively in text-books.

But the point which more nearly interests all of us is that brought up by Dr. Gale's first phrase, when he comes to speak of treatment. "The treatment in this condition is almost always surgical." There never will come a time when the knowledge of the medical profession is so all-embracing that all its members will see such matters in the same identical light. Each of us has his standpoint. Each of us wears glasses whose hue is peculiar to himself. Certain personal observations and experiences impress themselves so deeply upon each one of us as to vitally influence his views; and these necessarily differ, and often radically, with the individual members of our guild.

The surgeon sees only cases which are referred to him by the physicians, who thereby confess themselves unable to satisfactorily treat these cases. There is nothing to be wondered at that the surgeon learns to look upon all cases as surgical, and believes there is no other treatment than surgical; naturally, since he knows only of cases concerning which this statement, as seen in the light of his experience, is true to him. But there is another side to this question as to most others.

My work brings me in touch with more than fifty thousand physicians, and my views are largely influenced by the reports from this, the largest collective investigation the medical profession has ever known. The composite picture

afforded by such reports must necessarily approximate the truth more nearly than those coming from any one man or group of men, however exceptional may be their qualifications or opportunities.

One instance of this is the reported experiences with anesthetics. While the gifted anesthetists of Dr. Mayo's hospital may list more than fifteen thousand ether administrations without a death, it would be preposterous to compare such a report with that resulting from the administration of ether by the rank and file of the medical profession all over the country, embracing as it does the widest possible range of qualifications. The true test of such a remedy is its application by the mass of physicians, learned and otherwise.

Dr. L. W. Littig, a distinguished surgeon of Iowa, took up the matter in exactly the right way when he communicated with every practicing physician in that State, asking for reports of deaths from anesthesia. A large number of deaths, from sixty to seventy, were reported to have occurred during the administration of ether or chloroform. While no comparative statistics were reported, his investigation proved the main point, and that was that deaths from these anesthetics were far more frequent with the general mass of the profession than when these agents were administered in a great hospital by skilled anesthetists with every resource which modern art could supply to prevent or obviate the dangers.

Going over a large mass of European clinical reports I was struck with the number of cases, diagnosed as ileus, which were described. In addition to these, there was a large number of cases described as external strangulated hernia. In these cases the Burggrave method of treatment was applied: hyoscyamine was given in full doses until the skin was flushed, the object being to relax the spasmodic contraction of the circular intestinal fibers. Simultaneously strychnine was given, also in full doses, to energize the longitudinal fibers. By the conjoined action of the two the obstacle was overcome in surprising large proportion of cases. In fact, taking these reports as covering the ground under discussion, one would feel tempted to say that there is no place for surgery in the treatment of such affections.

When a physician has applied this method of treatment, conjoined with enemas and such other accessories as he may deem advisable, and has

treated such a proportion of these cases as comes to a physician in active practice, for many years with a single failure, without once having had to call the surgeon to his aid, it is evident that his view of the matter must radically differ from that of the surgeon, who has seen only the failures. Truly, the physician is strongly tempted to believe that these failures, which are sent to the surgeon, occur in the hands of physicians who are either unfamiliar with the treatment described, or are so unskillful in trying it out that they have scored failures where better-qualified practitioners would have secured successes.

The truth lies somewhere between these two extreme views, and necessarily both should be considered in deciding the treatment of *every* individual case. There are certain features about intestinal obstruction which would imperatively demand the intervention of the surgeon at the earliest possible moment. But to jump from this conclusion, which all will admit as true, to the further one that every case of obstruction of every grade should be likewise hurried to the surgeon, without any attempt at relief from less radical methods of operation, would be grotesquely irrational. It is my conviction that such extreme views on both sides can only proceed from a relative ignorance displayed by each as to the facts known to the other.

In Dr. Gale's paper he speaks of administering eserine sulphate in doses of 1-50 grain hypodermically every two to three hours.

In a veterinary journal before me I note an article on the treatment of impaction in horses, from which I beg leave to quote the following: "It would be at best useless and dangerous if not actually criminal to administer a hypodermic purgative to an animal suffering from an impassable intestinal obstruction before the offending mass is broken down, or at least softened to such an extent that the increased peristaltic action can be utilized to an advantageous end. Hypodermic purgatives undoubtedly fill an important office in veterinary medicine, and no progressive veterinarians should be ignorant of their indication and uses, but I believe a great many valuable horses are victims of a too hasty conclusion upon the part of some practitioners regarding their administration. * * * The average case of impaction when the veterinarian is called usually requires something to be done quickly. Here indeed seems to be the place for

a hypodermic purgative, though probably if given we will have a dead horse and a lost client."

The hypodermic purgatives used by our veterinary brethren are arecoline, eserine and barium chloride. The dose of eserine suggested by Dr. Gale is not always a safe one. More than once I have had alarming collapse follow single doses of that size, and for years I have refrained from larger doses than 1-100 grain. The effect of eserine is not very lasting, as it is one of those remedies which is quickly eliminated by the usual channels. For the purpose mentioned it is not as satisfactory as strychnine. Still better results are obtained from joining the two, giving 1-20 grain of strychnine and 1-100 of eserine, with 1-100 to 1-50 of hyoscyamine.

Nor can I agree with Dr. Gale's suggestion of sparteine hypodermically to support the pulse and stimulate the kidneys. Cushny, in his latest work on Therapeutics, ranks sparteine among the sedatives, with gelseminine and cicutine. This is going too far. Sparteine appears to occupy a middle place, close to the dividing line between cardiac tonics and cardiac sedatives. If anything, it is sedative. Its function seems to be rather to relax the vascular tension of the arterioles, and this facilitates the cardiac functions.

Of the cardiant group, for the purpose suggested apocynin comes most nearly to filling the indications, since it undoubtedly strengthens the cardiac muscle and affords some degree of increased tension to the smooth muscular fibers. It acts more decisively in increasing intestinal peristalsis than any other of this group, unless it may be convallaria. Apocynin increases kidney action, when the latter is deficient from undue vascular relaxation or defective cardiac impulse.

The brilliant results obtained from the use of sparteine by Dr. McGuire, of Richmond, and Dr. Pettet, of Memphis, are, I believe, to be attributed to the relaxant effect of this remedy upon the arterioles, and not to any direct effect in increasing cardiac force. This explanation seems especially applicable to the cases reported by Dr. Pettet, in which sparteine succeeded when digitalis pushed to the dosage had failed. Few therapists realize that it requires from thirty to sixty hours to develop the full cardiant force of digitalis, and that even then the influence of digitoxin in contracting the arterioles is a more powerful element of this drug's action than

its cardiotensive power. My impression from studying Dr. Pettet's report was that his patients were saved from the effects of overdoses of digitalis by the prompt and generous administration of sparteine hypodermically.

A number of years ago a physician, whose name I have now forgotten, devised an exceedingly ingenious method of applying faradism intrarectally, or, as he claimed, intracolonicallly, for the relief of the severe forms of constipation, and the treatment of colonic paresis. The method was unfortunately allowed to go by default.

For some years, in the treatment of intestinal impaction, I have employed enemas of pure undiluted kerosene. I have found nothing that so quickly and satisfactorily caused disintegration of fecal masses. Up to the present I have been unable to find records of a solitary case in which the coal oil did any harm. I have used it on myself and can testify to the absence of irritation or other ill results. From one to four pints may be injected into the bowel, distributed by gentle massage, and allowed to escape naturally. No special precaution has as yet proved advisable.

The following combination is suggested as a remedy for that decline in the peristaltic power of the large bowel which is characteristic of advancing age, and is the principal cause of that form of ileus so common in elderly persons. Incidentally this formula offers a good example of the newer method of building prescriptions, where every ingredient is employed for a distinctly comprehended purpose, and the mixture is not a mere huddle of somewhat analogous remedies, each of which is presumed or hoped to exert some curative influence not clearly defined:

Berberine hydrochloride, gram	...0.01
Juglandin0.01
Eserine salicylate0.00025
Strychnine sulphate0.001
Oleoresin capsicum0.001

This may be given three times a day upward, until the dose is reached that exactly restores normal tonicity to the colon. Here the berberine tends to contract the relaxed connective tissue of the bowel wall, juglandin incites the secretion of healthy intestinal fluids and relieves costiveness, eserine increases peristalsis, strychnine energises all the intestinal functions, and capsicum increases the sensitiveness of the colonic mucosa, rendering the bowel less

tolerant of fecal contents. The combination has proved effective for the cases for which it was designed. One of the first reports made by the patient is generally that the stools are decidedly more copious than usual.

PRESIDENTIAL ADDRESS.—LEGISLATION NEEDED—HOW SHALL WE INCREASE OUR MEMBERSHIP—THE PHYSICIAN A POOR BUSINESS MAN—THE CAUSE AND TREATMENT.*

By M. L. DALTON, M. D., Floyd, Va.

Again I wish to thank the members of the Southwest Virginia Medical Society for the honor conferred by electing me as your presiding officer, the highest honor within your gift to bestow. Being one of the young members, I have felt some embarrassment, as it seemed to me such an important position should have gone to one older in years and experience. However, I appreciate sincerely what you have done, and am indeed grateful to you.

The home of our Society is in the grandest section of this glorious old Commonwealth, where agricultural products are the richest, mountains the highest, water the purest, our women the prettiest, and where many men of fame have been born and lived.

How Shall We Increase Our Membership.—In order to be a power in the scientific world or to reap the benefits for which we are banded together, we must enlist every reputable physician within our borders, and in order to get the members as well as non-members interested, it is the duty of every member and every physician to assist the officers of this Society in enlisting new members thereby broadening our influence and benefits. A meeting of this kind not only benefits the members, but the whole Section which we represent, by the exchange of ideas derived from actual experience, redounding untold benefits to the individual physician and his clientele.

I have mailed a circular letter to every member and one to the non-members, enclosing an application for membership in this Society; how well I have succeeded, I refer you to the Secretary. It is my most earnest desire that every member use his best efforts to promote the Society's interest.

Legislation Needed.—Under existing laws, a

medical man may be called on to give expert testimony for the sum of 50 cents per day. The State of Virginia should not and does not expect this. A physician's knowledge is his capital, and he should not be called on to dispense it without proper remuneration. Of course, we do not object to testifying to a non-medical fact like anyone else, but when it comes to a medical opinion that requires study to keep from being tripped by our professional brother, the lawyer, who has read up his subject the night before, the physician should have proper compensation for his knowledge and experience, gained by many of us by the hardest fight in the thickest of battle.

Again, at the present time, a medical man may be called to any part of the county to sit on a commission of lunacy for the sum of \$2.50; if he refuses, he may be forced to go to jail or pay a fine for contempt. This is wrong, and should be changed; if he is forced to go from his office, he should have mileage. I myself have gone eighteen miles, and such matters as this should be called to attention of the Legislative Committee of the Medical Society of Virginia.

In order to make our State Board of Health effective, we must have the co-operation of every physician in the State, though in view of the fact that the physician is constantly exposing, not only himself, but his loved ones, to contagion for the welfare of the people and the betterment of the State, and as he does more charity than all other professions and occupations combined, as well as serves as the greatest teacher and disseminator of valuable knowledge in the community within which he lives, the State of Virginia should no longer be allowed to hold up her proud head and charge physicians a special license tax. This Society should see that this subject is kept before the Legislature until justice is done. We no longer have that noble and lamented physician, Dr. Landon B. Edwards, to fight our battles for us, but it must rest on others now. And at this time, we should appoint a Legislative Committee to draft such laws as needed, and submit them to the Legislature through the Legislative Committee of the Medical Society of Virginia.

Lest we forget, I believe physicians should keep an eye on a move, it seems to me, that may extend too far—that may cause the general practitioner to lose some of his influence and

*Address of the President before the Southwest Virginia Medical Society, at Bristol, Va.-Tenn., December 15-16, 1910.

prestige. If it should become generally known that political doctors and a bacteriologist at the State Capitol thought the family physician did not know when to isolate a case of contagion, did not know unless told by one high in authority in such matters when to remove such restrictions, could not diagnose a case of chicken-pox from small-pox without the State's help, I say, I fear the pendulum may swing too far. I believe as much as any one that it is the physician's duty to aid the State Board of Health in every way possible, yet I believe a mistake was made when so much authority was given to the local boards of health and in a sense taken from the physician in charge; it is this fact that I resent.

As the law stands now, it makes it the duty of every physician in charge of certain contagious or infectious diseases to report same at once to the local board of health, who shall isolate and quarantine the case and raise the same. I am sorry to make the accusation, but I have known men on local boards of health that I would not care to have prowling around a case of mine—men who could not possibly help offering suggestions as to treatment in your absence.

I, for one, do not believe that the average man on the local boards is any more competent to do this work than the average physician. I have known men on local boards of health who were not graduates in medicine, who were not capable of making a diagnosis in many of the cases they now have in their charge.

I believe the law should be changed so as to make every qualified physician feel that he is a part of the State Board of Health; make it the duty of every physician to isolate and quarantine these cases of contagion, and report same to the State Board of Health, but leave the cases entirely in his hands.

The Physician As a Business Man.—It is said the physician, as a rule, is the poorest business man of all the learned professions, that he is so pre-occupied in helping those who are sick and in distress that he allows himself and his own to suffer. It is a sad commentary that the average income of the most learned and hardest worked of all professional men is only \$600 per year. The main reason lies within himself. He fails to collect what is justly due him, is rushed through life without taking time to properly look after his own, allows the dead-

beat to impose on him, and fails to charge what his services are worth.

The greatest mistake a young man can make is to try to build up a practice by cutting prices under the older man and expecting to raise charges as his reputation increases—a thing he can never do unless he moves to another field. As a rule, a man is worth no more than he thinks he is, and the man who charges but little, is regarded as worth but little by the laity, and they are usually right.

Again, there are too many general practitioners who merely examine a patient, make a diagnosis to see what specialty he comes under, and rush him off to the city. At this time there is no excuse for this with the numerous post-graduate schools in the country; you can equip yourself and properly treat nine-tenths of the cases you have been sending away, and secure a good fee.

Finally, there are over \$60,000,000 spent each year in the United States for patent medicines, properly called the great "American Fraud." Remove the mystery by giving the laity the formula, and they will instantly collapse like a punctured balloon.

Correspondence.

Conservatism in Ovarian Operations.

Mr. Editor: I have been much interested in an article entitled "Conservatism in Ovarian Operations," by H. Stuart MacLean, in your periodical of June 9, 1911.

I was especially struck with the statement of Dr. MacLean that the error lies more in diagnosis than treatment: "In the past we have been too prone to blame the pelvis as the cause of symptoms which we do not wish to ascribe rightly to neurasthenia or temperment, or which we do not study with sufficient thoroughness to arrive at such a diagnosis." Many pelvic disorders are present in hysterics. The tendency of the condition to center around the genitalia arises from the inclination of psychic perturbations to collect there since the sexual system, more than any other, exerts emotional power over the individual, his morals, as well as social questions.

The vicious circle of pathology is no where better illustrated than in these relations between hysterica and the genitalia. The latter may

be so disturbed as to upset the equilibrium of the nervous system in such a way that they rise into consciousness and by removing inhibitions or nervous explosions produce temporary, albeit lengthy hysteroid states.

Removal of a genital disorder will not do away with these consequences, which, hence, require separate treatment. The various morbid conditions of the genitalia, cervix laceration, perineal laceration, retroflexions, retroversions, ovarian diseases, etc., as well as rectal disorders may all produce profound neurasthenia, which, under a hysteroid predisposition, readily becomes an acquired hysteric constitution of intractable type. Moreover, the emotional and nervous explosions which result in both the hysteric and hysteroid states, generally are attended by such disturbances of innervation of nutrition, elimination and oxidation as to cause profound autointoxication, and this is a point which should be remembered in the treatment of pelvic disorders.

The old theory of the "womb" origin of hysteria led to pelvic obsessions not only on the part of the patient, but likewise on the part of gynecologists, producing tremendous abuse, against which gynecologists, like T. A. Emmett, Goddell, and later Senn protested. That gynecologic treatment is necessary sometimes in hysteric pelvic disease, not only from the local condition, but likewise for its constitutional effects is clear. That the local gynecologic procedures alone have their psychic effects, and sometimes very disastrous effects are certain. The disastrous somatic results of oophorectomy need now no demonstration, but these are not the only evil effects of the operation. A psychic, suspicious, irritability with depressing obsessions of being unsexed results and is a fertile evil of chronic hysteric insanity which often passes into paranocia of the dangerous persecutory type.

Undue puttering over the genitalia, moreover, creates a pelvic obsession which makes an otherwise quasi normal hysteroid a womb crank. Gynecologists are not the worst offenders in this regard. The evil psychic influence of this work has been as great, if not greater, than that of the more radical operations, but the somatic disturbance was somewhat less while resultant neglect of actually indicated surgical procedure was much greater.

The secondary results in the autotoxic neurasthenia or hysteria require peculiar treatment, since very often such treatment causes disappearance of all symptoms, despite the continu-

ance of their seeming primary causes. The treatment of these last is imperatively demanded, however, as they constitute a continuing predisposition. Whether they should be treated first or as part of the nerve autotoxic treatment must be determined by the erethism of the patient. Gynecologic treatment will increase this in most instances and tends to create a pelvic obsession.

Hysteroid manifestations and seemingly true hysteria often procede from unequalled development of ovaries and uterus during the stress of puberty and adolescence, under that law of economy of growth which compels the struggle for existence between the organs for assimilable nutriment. Failure of the ovaries to obtain their share results in undue uterine development. Failure of the uterus to develop beyond the infantile state results in disproportionate development of the ovaries. Either results in hysteric or hysteroid conditions with either hyperesthetic or paresthetic erethism. In either case the treatment of the pelvic organ including electrotherapy combined with proper rest treatment, inclusive of treatment of autointoxication by free elimination from the bowels and correction of any acidemic condition which may exist, leads to properly balanced development of the reproductive system in all its somatic and psychic relations.

If more gynecologists were as conservative as is Dr. MacLean, the results in many of these neurasthenic and hysteric, so-called "gynecologic cases," would be very much better. Without there is distinct disease of the ovaries requiring partial or whole removal of these organs, it is much better to treat the cases, especially if there is a hysteric or nervous element present, by rest, removal from the old environments and by free elimination, together, perhaps with certain antispasmodic and nervine remedies. Of these I would mention effervescent salines for laxative purposes, something like sodoxylin, to overcome the acidemia, monobromated camphor, therapeutic suggestion and removal from home environment.

GEO. F. BUTLER, M. D.

"In fractures, if the swelling be very marked, if there be evidence that the extravasation has not attained its maximum, the limb should be elevated and subjected to the compression of a rubber bandage, and this should be followed by gentle massage, before the plaster bandage is applied."—Ware.

Analyses, Selections, Etc.

On the Treatment of Spastic Paralysis.

Professor Adolf Lorenz, Vienna, commenting on the Foerster operation for radicostomy, says that above all stands demonstrated that muscle-spasm disappears, in part immediately after the operation, in part following gradually; and with it an important hindrance to the usefulness of the extremities is removed. The more extensive and through the radicostomy, the more complete is the flaccidity of the musculature. Some of the cases which were first shown by Foerster at the Orthopedic Congress in Berlin, created the impression of a severe, spinal, flaccid paraplegia as observed after acute poliomyelitis.

The previously present contractures, especially if these (as is usual in such cases) are high grade, are not removed by the operation. Slight contractures may, after a long while, disappear spontaneously; but for such mild cases the operation does not commend itself. All obstacles, insofar as they are occasioned by severe contractures, must be subsequently settled by orthopedic treatment. Only then are the children placed in a position of gradually learning to walk the path of long-continued gymnastic measures and massage.

Posterior radicostomy is a great advance in the treatment of spastic paralysis. It remains, however, to be seen whether or not the operation does not later affect the motor function disadvantageously. It seems, in fact, probably that the function of the posterior roots involves a trophic influence on the cells in the gray anterior horns. Sherrington, Omeralt, and others have shown conclusively that after complete sensory paralysis (following division of the posterior roots) consequent motor paralysis occurs. Codivila expresses a similar opinion: through lessening of the stimuli which normally reach the gray horns from cerebral or peripheral tracts, a slowing or deterioration of the cell nutrition can occur. Further, one would not be surprised if, because of the artificial rachischisis, the posterior rows being removed, a meningocele should develop later. In any event, we must await further experience before a definite judgment of Foerster's operation can be rendered.

Only the most severe forms of board-like stiffness, when the children, in consequence of

most marked spasms are really entirely immovable and must lie in bed like laths, come into consideration for radicostomy. The condition, it must be emphasized, is in no way due to muscular spasm which, in the great majority of cases, prevents the locomotion of the patient, but is caused by the contractures.

Radicostomy is not to be resorted to until the inadequacy of orthopedics has been demonstrated. Only after relieving the contractures and the patient remains unable to walk—when the spasms are truly the responsible source of this inability—only then does Foerster's operation enter into consideration.

As to the former methods of practice and, in many cases, those pursued now, the following is outlined. Remove, first, all the adductor spasm. In a special publication on the treatment of spastic paralysis, in 1897, Lorenz proposed resection of the obturator nerve for that purpose. The results were unsatisfactory. Myorrhexia adductorum has proved itself better than any nerve operation—much better than any tenotomy. The forcibly stretched and thereby torn adductors lose their spasm entirely, and with it the obstacle to walking ceases, for an habitual slight abduction position is forced upon the hip-joint.

A similar procedure recommends itself in regard to the flexors of the knee-joint. Here, only, is the division of the muscles—better myorrhexis than myotomy—and their corresponding stretching a useful procedure for their lengthening and for the diminution of the spasm. Nerve or muscle transplantation should have the same success; though it would seem that this complicated procedure is inferior to the simple muscle operation. Most important is the production of a slight genu recurvatum in place of the previously present flexion-contraction of the knee. Removal of the foot contraction presents the slightest difficulties. In contrast with the case of the knee-joint, attention must be directed to the prevention of pes calcaneus. An over-correction of the deformity here would be of damage.

Immobilize the accomplished corrections for three or four months in a plaster dressing including legs and pelvis, and end your work with a careful gymnastic and massage after-treatment. Then, you will have need for the ingenious operation of Foerster only in the most exceptional cases.—(*Therapeutic Gazette*, July, 1911.)

The Common Behavior of the Heart in Influenza and Pneumonia in Childhood.

LeGrand Kerr, New York, says that it is a fact that it is not always appreciated that the action of the adult heart is not in any way a fair indicator of what may occur in earlier life. It is the common practice to anticipate a cardiac crisis in the pneumonias of children and to institute some sort of treatment within a short time of the termination of the disease. This is irrespective of the type of the pneumonia. Upon the other hand, unless the disease is severe enough to bring about a very considerable depression, influenza is not commonly looked upon as a disease which particularly affects the heart, and, therefore, the majority of cases receives no direct cardiac care.

There are sufficient anatomical and physiological differences between the adult and the child's heart to convince us that the effect of similar diseases must be different, even though we disregard the other factors of immature development which are contributory. And thus the ordinary adult standards cannot be made to reasonably apply to similar conditions occurring during childhood. Without enumerating all, it might be said that there are three essential clinical characteristics of the circulatory apparatus of children which are prominent: (1) A diminished blood-pressure; (2) a rapid circulation, and (3) a rapid pulse without any other signs. The difficulties which are offered by an examination of the heart in infants and young children are not those of method, but rather of deduction.

It is true of all the acute infections that the heart is influenced more or less unfavorably by the specific toxemia, but it is particularly true of influenza that the unfavorable influence is out of all proportion to the other symptoms and that cardiac involvement is quite certain and early irrespective of the particular type that the influenza takes.

Clinically, we encounter this proposition in influenza in children:

1. There is very early involvement of the heart irrespective of the type of the disease.

2. When pain occurs which is referred to the region of the heart, it practically always follows the symptoms of the onset and is not coincident with them.

3. When the disease exhibits the effect particularly upon the nervous system, such symptomatology is not usually of immediate but of later

development, so that frequently several days elapse before the occurrence of marked nervous symptoms.

From the clinical manifestations, then, we seem justified in concluding that the effect is directly upon the cardiac muscle in the large majority of cases, but that in a much smaller number of cases, the disturbances are due in part to neuritis of the cardiac nerves.

In neglecting to appreciate the influence of influenza upon the child's heart, we may be led to prescribe such remedies as are depressing to the heart's action, or which disturb its function, and therefore, we are not alone withholding the support to the organ which it should receive, but we may be unconsciously damaging it.

The toxemia of a lobar pneumonia is not severe, and its effect upon the child's heart is not marked. There are many contributing factors which render the child's heart less susceptible to serious damage during a lobar pneumonia than is the heart of the adult, chief of which are the limited course of the disease, the still unenfeebled condition of the heart and its proportionately strong right ventricular contraction. In children, the danger of this disease is not from cardiac collapse, but from the occurrence of fibrinous or purulent pericarditis, and it is not unusual to find that these latter are mistaken for deep-seated, unresolved pneumonias.

To recapitulate:

1. In the very large majority of instances, the danger to the heart in children who are the victims of pneumonia or of influenza is not the same as in adult life and cannot be judged by the adult standards.

2. The anatomic and physiologic peculiarities of the child's circulatory apparatus markedly influence the clinical manifestations irrespective of the other contributory factors.

3. That as the incidence of cardiac involvement is very early in influenza and is probably myocardial rather than neurotic, the time to begin treatment of the heart is as soon as the diagnosis of influenza has been made.

4. That in lobar pneumonia, it is unusual for the heart to demand any active treatment, either before, at or following the crisis.

5. That the peculiarities of the disease and the patient in broncho pneumonia place an unusual and prolonged strain upon the heart, and

make the demand for an active treatment in this disease early, prolonged and judicious.

6. That coughing may be as important an element as increased blood-pressure in the production of cardiac hypertrophy.—(*Med. Review of Reviews*, June, 1911.)

Undiluted Citrate Milk.

Mann, in the *Guy's Hospital Gazette*, explains very clearly the method of feeding infants on undiluted cow's milk, which has been for three years adopted at the Evelina Hospital. So great a revolution is bound to excite incredulity, but the author acknowledges himself a converted skeptic, and his list of cases showing the weekly weight of the infants concerned is one which speaks for itself. Only six babies out of his last four hundred have had to be placed upon other forms of diet. Three facts, he says, have to be remembered: That the great stumbling-block to digestion is the casein clot from cow's milk, and that mere dilution does not remove this difficulty; secondly, that the addition of sodium citrate to each undiluted feed leads to the formation of a much less dense clot; lastly, that the bulk of each feed is small and, hence, vomiting is much less likely. In practice, the mother is provided with a solution of sodium citrate in water containing as many grains to the dram as there are ounces in each feed. She is told to put a teaspoonful into the milk; to stir and warm until the food is steaming, and then to cool it down to the proper temperature.

The amount of each feed and the total quantity per diem depend upon the size of the child and not upon its age. At six months and upwards, two pints in twenty-four hours can be taken by many children; but even at a month and less still, there is ample evidence in the doctor's statistics to show that small infants can thrive remarkable well on this undiluted citrated cow's milk.—(*Charlotte Medical Journal*, July, 1911.)

Book Notices.

The Care and Training of Children. By LE GRAND KERR, M. D., Professor of Diseases of Children. Brooklyn Post-Graduate Medical School, etc. Funk & Wagnalls Co., New York and London. 1910. 12 mo. 233 pages. Cloth, 75 cents, net; by mail 82 cents.

The writer of this manual presents much

good advice for the parent, part based on medical, some on general knowledge, and some on common sense. Could parents be induced to read it carefully, they would find many helpful points on the management of older children.

Plaster of Paris and How to Use It. By MARTIN W. WARE, M. D., Instructor in Surgery, New York Post-Graduate Medical School. Second edition revised and enlarged. 12mo. of VIII., 102 pages, 90 original drawings. Surgery Publishing Co., New York. 1911. Price, cloth, square form, \$1.25; De Luxe leather, \$2.50.

Every physician has occasion once in a while to use the plaster of Paris bandage, possibly for a fractured limb, maybe for a Pott's disease, or perhaps for some other condition. Few general practitioners have constant need for it; consequently, there is a tendency to get rusty on many little points likely to come up in its use. We know of no better way to remove such "rust spots" than to have this little book convenient for reference at such times. It is cheap, it is handy, and apparently fully covers the subject as indicated by its title.

Editorial.

The Control of Typhoid Fever in the Army by Vaccination.

In the distribution of public document, H. R. 1445, of the Sixty-first Congress, 3rd session, a great service has been rendered the medical profession.

The document is a report of Major F. E. Russell, of the Medical Department of the United States Army, and deserves much study and a wide circulation by reason of the importance of the subject.

Every well-informed medical man knows typhoid fever is a preventable disease, when such measures as a pure water supply, clean and proper distribution of milk, filling cess pools and swamps, closing shallow and polluted wells, uncontaminated and properly protected food stuffs, together with the exclusion of flies and insects with the eradication of their breeding places, are adopted. The adoption of these measures has greatly reduced the number of cases of this disease as well as reduced the mortality rate.

Such measures are being enforced more or less now where health officers are active, but such measures of municipal and State sanitation are problems requiring civic activity and public education and for that reason are, necessarily, slow in results.

In a military service, the safe-guarding of troops is a different matter, especially with troops in the field. The camp to-day may give place to another on the morrow; executive medical officers charged with the selection of camp sites, the choosing of a water supply, etc., frequently become careless or delegate, their duties to men in the ranks, who have no incentive to perform additional service; consequently, sinks are not properly cared for.

The bacillus carrier is the greatest enemy to troops in camp, and epidemics may occur despite the most careful attention.

Russell shows in the Boer War the British had 31,000 cases, with 5,877 deaths; in the Franco-Prussian War there were 73,396 cases with 8,789 deaths among the Germans alone; in the Civil War in this country there were over 80,000 cases in the Northern Army; in the Spanish War there were 20,738 cases with 1,580 deaths out of a strength of 107,973 men, a rate of 86.24 per cent. of the entire mortality of the War.

Reference is made to the number of cases reported in civil, as related to the number occurring in garrison life during the time of peace; here Russell writes: "In other words, a man who enlists in the army and serves in a garrison in the United States, is only about half as liable to become infected as if he remained at home."

Although the morbidity as well as the mortality rate of typhoid fever, as shown by reports from those States where registration is compulsory, has, during the past two or three years, been greatly reduced, still the rate is far in excess of what it should be.

When the exigencies of the service in their bearing upon this disease, and the impossibility of executing required sanitary measures are considered, especially during the mobilization of troops in practice camps, or even in active hostilities, protection of the largest percentage of the strength becomes impossible. More noticeable is this with the National Guard or volunteer troops. Here Russell states: "There is nothing which answers these requirements as well as anti-typhoid vaccination, since this

measure, by increasing the resistance of the individual to infection, operates under all conditions and at all times, no matter how adverse the circumstances."

Vaccination against typhoid fever is a simple operation and as easily performed as vaccination against small-pox; the sequelae are shorter in duration, the protection which it affords is as efficient, and time alone will tell the length of time the immunity lasts.

The early history of anti-typhoid vaccination shows the first experiments in this line of study were made by Frankel and Simonds in 1886, in experimenting upon rabbits. Pfeiffer and others, in 1893 and 1894, discovered the nature of the immunity against typhoid. The first experiments in immunizing men, however, were not made until 1896. Wright published a paper on this subject, one year later.

Objections were made to a general adoption of this preventive measure, owing to doubts regarding the efficiency of the inoculation. These objections soon disappeared, and at this time even the laity in India have made the anti-typhoid vaccination popular, after having seen the wonderful results obtained with it in the British Army.

The method employed in the United States Army is to give a dose of 500,000,000 dead bacteria in one-half cubic centimeter of sterile salt solution, preserved with tricresol; the second and third doses are double this amount, 1,000,000,000, in one cubic centimeter of fluid, and are given ten days and twenty days later. The injection is made with a sterile hypodermic syringe, into the subcutaneous tissue over the insertion of the deltoid, the skin having been first prepared by washing with tricresol and soap, and the needle puncture is then cauterized with liquor cresolis compound, or it may be sterilized with tincture of iodine, usually applied with a small brush, which is again wiped over the puncture, thus sealing the opening. The inoculation is often followed by a smarting pain, lasting a few minutes. The resulting reaction varies from none to more or less severe. About 60 per cent. of all inoculated show no reaction: less than 1 per cent. show severe reaction. In those cases where a reaction is found, the symptoms resemble very closely the prodromal or onset symptoms of the disease. An officer the day after his first dose, remarked that had he not the vaccination to blame for his unpleasant feelings, he would

certainly have gone to bed and sent for a doctor. This man had suffered from an attack of typhoid fever three years previously.

After the first dose, the reaction will appear within twelve hours, and pass off within twenty-four to seventy-two hours. All of the onset symptoms of typhoid have been noted, and a fever as high as 103 degrees has been recorded.

Antityphoid serum will retain its potency for three months; after this period of time has elapsed, it will gradually become less efficient and should not be used.

In the employment of this vaccine, a safe preventive against typhoid fever has been found, and when it has been generally adopted, the morbidity and the mortality of typhoid fever will become so far reduced, that one of the stigmas against cities and small villages will disappear.

As a preventive measure there is no doubt. As a curative agent, there is still room for knowledge, which will be gained from further experience in its employment. Its greatest blessing to mankind, however, will be in its virtue to cure the chronic bacillus carrier, that walking incubator of the disease, and a scourge to the human race, if such powers can be discovered for the inoculation. In any event, the observations which have so far been recorded prove it a harmless agent.

Child Labor Law.

Penalties imposed in violation of the "child labor law" are accomplishing much in the way of leaving children their freedom up to fourteen years of age. Inspectors are constantly at work, and several cases have recently come to light—one, where a child seven years of age was working in a tobacco factory.

It is inconceivable that employers should be willing to engage the services of these tiny children, even though it meets with the approval of the parent. Then, too, could not twice the amount of work be done by some one requiring twice the amount of remuneration? Besides, it does not seem that it should be necessary to press such youngsters into service, with the number of charities at work in their behalf. It is preposterous for a parent to insist that his child should, at such an early age, enter into work of a kind that will necessarily impair its health, and, on account of a wretched constitution, place it in a position of becoming a care upon the

family, and possibly the community, by the time it reaches the age when it might be expected to be wage-earner. Parents are also working harm to themselves, from a selfish standpoint, for such enfeebled health prevents the child when grown from rendering parents such material assistance as they have a right to expect.

Could employers be persuaded to put themselves in the child's place, figuratively, this difficulty could be practically remedied, and the battle won for the good of the child—the man of the future.

The Association of Surgeons of the Atlantic Coast Line Railway

Met for their seventh annual convention at the Lynnhaven Hotel, Norfolk, July 25-26. The address of the president, Dr. A. M. Brailsford, of Mullins, S. C., was followed by a number of other interesting papers by members. The subject for general discussion was "Fractures," with Dr. J. M. Parrott, Kinston, N. C., as leader. Dr. C. P. Wertenbaker, who was detailed to represent the Public Health and Marine Hospital Service, read a paper on "Railway Sanitation," and it was decided by the Executive Committee to recommend to the railroads that the suggestions given be enacted into laws to be adopted by the railroad. On the last day of the meeting, the surgeons and their families were given a trip through Hampton Roads to various places of interest in that vicinity.

The new officers elected are, president, Dr. J. M. Parrott, Kinston, N. C.; vice-presidents, Drs. J. E. Boyd, Jacksonville, Fla., and M. N. Stow, Jessup, Ga.; secretary-treasurer, Dr. C. P. Aimer, Charleston, S. C.; executive committee, Drs. G. G. Thomas (Chief Surgeon), of North Carolina; Southgate Leigh, Virginia; E. L. Cox, North Carolina; W. S. Lynch, South Carolina; J. M. Spence, Georgia; G. A. Hammond, Alabama; and J. H. Pittman, Florida. The place of meeting for 1912, to be selected by the executive committee, will possibly be Savannah, Ga.

The Piedmont Medical Society,

Composed of many of the leading physicians of that section of Virginia, at its last regular meeting, elected the following officers for the ensuing year: President, Dr. George W. Starke,

Overton; vice-presidents, Drs. E. D. Davis, Stanardsville, and H. W. Porter, Louisa; secretary, Dr. Frank C. Scott, Orange; and treasurer, Dr. J. T. Walker, Barboursville.

The next meeting will be held at the University of Virginia Hospital, January 20, 1912. The committee appointed to arrange for this meeting includes Drs. Hugh T. Nelson, Jr., John Staige Davis and Harry T. Marshall.

Patrick-Henry (Va.) Medical Society.

At the last meeting of this Society, Dr. John W. Simmons, of Martinsville, was elected president, and Dr. J. M. Shackelford, also of Martinsville, was re-elected secretary. Meetings are held quarterly.

Resorts Wanted for Ex-Patients of Catawba Sanatorium.

Owing to the recent decision of the Virginia State Board of Health to limit the stay of tuberculosis patients at Catawba Sanatorium to six months, the Virginia Anti-Tuberculosis Association and State Health Department are trying to secure suitable homes throughout the State, where patients may be able to receive proper care and continue their treatment upon leaving the Sanatorium, with the hope of effecting a complete cure before returning to their homes.

Dr. Douglas S. Freeman, Richmond, Va., Executive Secretary of the State Anti-Tuberculosis Association, has direct charge of this work.

Seaboard Medical Association.

Announcement has been received from the president, Dr. Clarence Porter Jones, that date for the next meeting of the Association to be held at Newport News, has been set for December 5-7, 1911.

The Virginia Board of Pharmacy,

On account of a lack of competent pharmacists in this State, unlike other professions, is clamoring to have an increase in the numbers in their ranks. As many aspirants as there are for lucrative positions, we should think all necessary to obtain the applicants required for such positions would be to publish broadcast this announcement.

The reason for this state of affairs seems to be due to the fact that when the Virginia law, re-

quiring a pharmacist to have passed a prescribed examination before filling prescriptions, became effective, many vacancies were created at one time, there not being a sufficient number of registered pharmacists to supply the demand.

Kentucky to be Admitted to the Registration Area.

The Bureau of the Census is co-operating with State Registrar, Dr. W. L. Heizer, of Kentucky, to secure a complete return of births and deaths in that State, with all information required by law, so that Kentucky can be admitted to the Registration Area. To secure this result, the help is needed of all physicians, undertakers, and local registrars.

We hope Virginia will soon fall in line, as such registrations are of vital importance.

New Library for the New York Academy of Medicine.

Members of the New York Academy of Medicine are still securing subscriptions for their new library building for which they have purchased lots adjacent to the building now owned at a cost of \$220,000. Owing to its large increase in membership since the opening of the present building twenty odd years ago, and the annually increasing number of books and periodicals, the present quarters were found inadequate, and a campaign started for raising funds for a new library which would prove suitable for the needs of the Academy for many years to come. Though a large amount has already been contributed, principally by doctors or families of physicians, many thousands are yet needed. As physicians from all parts of the State have access to these volumes when in New York, and as the good accruing is to the public, there seems no reason why contributions should be limited to the profession of New York City.

New Field Inspector for Hookworm in Virginia.

Dr. Allen W. Freeman reports to the Rockefeller Sanitary Commission that the field inspectors of the Commission connected with the State Board of Health of Virginia, Drs. A. C. Fisher, W. A. Plecker and W. A. Brumfield, are working steadily, and will be joined the first of August by Dr. H. G. Tarter, who succeeds Dr. R. C. Carnal, who has resigned to resume private practice.

Dr. Tarter is a graduate of the Medical College of Virginia of the class of 1911.

Bellevue Hospital, New York,

It is reported, has opened a school for the scientific training of midwives, the course of instruction covering six months—half being spent in the school and hospital and the other half in homes. It is the first well-established school of this sort in the United States, and the need for such a school seemed imperative, owing to the large number of births reported in the United States during the past year at which physicians did not officiate.

Dr. G. Frank Lydston versus A. V. Harmon and W. J. Jackman.

In a notice recently received from Dr. Lydston, he says that "the book published by one A. V. Harmon, and one W. J. Jackman, under the name of 'Large Fees and How to Get Them,' of which I am alleged to be a joint author, is, so far as the use of my name is concerned, a forgery. All persons selling or circulating same, or advertising or reviewing the book in connection with my name, do it at the risk of legal complications."

William Byrd Hospital

Has given up its care of Chesapeake and Ohio Railway practice, and will hereafter be used only for the private patients of the hospital staff. The building will be closed for the month of August, during which time it will undergo many alterations and improvements. The equipment will likewise be greatly improved, and it is anticipated that everything will be in readiness for the reception of patients during the first week in September.

The New Orleans Medical and Surgical Journal,

Commencing with its sixty-fourth volume in July, inaugurated a new department to be known as the "Charity Hospital Bulletin," which will be in charge of the house-surgeon, Dr. J. A. Danna. He will be assisted by the house and visiting staffs of the hospital in reporting the large number of clinical facts accumulated.

Lieutenant-Colonel Junius F. Lynch,

Norfolk, Va., Surgeon-General of the Virginia Volunteers, was in charge of sanitary affairs, at the recent encampment of State troops at Culpeper, Va.

Dr. E. H. Terrell,

Richmond, Va., has recently been elected Associate Member of the American Proctologic Society. This Society is national in scope and has a limited membership. There are not more than three members in the South. The election of Dr. Terrell is, consequently, a source of much gratification to all of his friends.

Dr. Terrell has for several years been specializing in rectal diseases and his election comes as a recognition of his work in this line.

Dr. Lucien Lofton,

A prominent physician of Emporia, Va., has resigned as editor of the weekly newspaper of that place, which position he has held for some time, so as to devote his entire time to his profession.

Dr. Julian M. Robinson,

Danville, Va., has tendered his resignation as a member of the Medical Corps of the Virginia Volunteers, owing to the pressure of professional affairs.

Location Wanted—

In the country or a small town, this State, by a young married physician, graduate of the University of Virginia, two and a half years hospital work and three years in private practice. Would consider an assistantship or association with an older physician, if future is good. Address A. B. C., care this journal.

Practice for Sale.

Having decided to change my location, I will turn my entire practice over to a good man on reasonable terms. Can furnish office and board very low. Can collect from \$1,500 to \$1,800 the first year. Address S. R. J., care this journal.

Obituary Record.

Dr. Herbert L. Adkins,

A prominent physician of Boydton, Va., died at his home, July 20, 1911. He was graduated from the Medical College of Virginia in 1893, and had built up a large practice since living in Boydton. His widow and two children survive him.

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Original Communications.

THE PATHOLOGY OF TONSILLAR BODIES.*

By E. W. PEERY, M. D., Lynchburg, Va.

The several lymphoid structures constituting Waldeyer's ring and referred to as the palatal, lingual, pharyngeal and tubal tonsils, frequently, through infection and hypertrophy, become abnormal or pathological structures.

The palatal, pharyngeal, and lingual tonsils have well developed crypts, and through these are subject to the same infections. While these tonsils represent a defensive circle, exercising protective functions and tending to prevent, by phagocytosis, the entrance of morbid organisms, it is certainly true that when their vital resistance is lowered, they are easy gateways of infection. Situated as they are, in an exposed position, these lymphoid structures, containing crypts and convolutions, often with imperfect epithelial lining, are subject to infection by bacteria from nose, mouth, lungs, larynx, and stomach. This being so, it is not surprising that infection is easy.

Hypertrophy of the tonsils in children is due to an inherited lymphoid diathesis, and infection of the lymph patch by pathogenic organisms. This is especially favored by measles, scarlet fever, influenza and tuberculosis. The palatal tonsils are many more times susceptible to diphtheria and tuberculosis than other portions of the throat.

George B. Wood examined 34 persons dead from pulmonary tuberculosis and found typical tuberculous lesions in the tonsils in 29.

Degenerate tonsils constantly harbor bacteria, and these bacteria may pass into the lymph channels beyond, without causing marked reaction in the tonsil. We should not

forget that the tonsils have for their afferent lymphatics the deep branches from the nose and mouth, while their efferent branches empty into both the superficial and deep cervical chains through the peritonsillar glands. These glands can be demonstrated in children as the glands commonly removed by surgeons for tuberculosis.

There are numerous anastomotic branches between these glands, and the flow of lymph is not always in the same direction. It may flow in any direction, seeking the line of least resistance. This accounts for infection being carried differently at different times.

While not always true, the pharyngeal and lingual tonsils are usually simultaneously inflamed with the faucial tonsils, and if the febrile symptoms continue after the inflammation in the faucial tonsils has disappeared, the pharyngeal and lingual tonsils should be looked after. It may be stated as an almost universal rule that when the palatal tonsils are hypertrophied, pharyngeal tonsils or adenoids are also present. Conversely, statistics show that only thirty per cent. of the cases with adenoids had apparent enlargement of the tonsils. A large per cent with adenoids show enlargement of tubal tonsils, and as the latter are so closely associated with the ears, they should be carefully removed with the pharyngeal tonsil.

Hypertrophy, then, is most frequent in the pharyngeal tonsil, next the palatal, while the lingual is least frequently affected, practically only in elderly persons, and most often in women.

In children the enlargement is due to an increase in cellular structures, whereas, in adults, the connective tissue cells are increased.

Less commonly hyperplasia, follows repeated attacks of simple inflammation. In these cases the remains of the inflammatory process are always found in the form of crypts

*Read before the South Piedmont Medical Society, at Lynchburg, Va., April 18, 1911.

with deep lacunae and coalescent masses of secretion. If the hyperplasia has been due to one of the infectious diseases, the surface of the hypertrophied portions presents only a certain wavy irregularity without further change.

In the pharyngeal tonsil the greatest pathological change is noticed in the median and lateral recesses. Hyperplasia, here, is occasionally accompanied by the presence of small, sessile or pedunculated neoplasms, consisting either of connective tissue or of epithelium.

In the epithelial lining of the crypts of these several tonsils, we find the following properties, according to Ballenger: "A biomechanical resistance to invasion of the microorganisms, because of the viscid mucus. A biochemical destruction or inhibition of the microorganisms in the crypts through the agency of a ferment thrown out by the epithelium under the stimulus of the retained bacteria.

As long as the epithelium of the crypts is in a state of tonicity or health, the equilibrium between immunity and infection is maintained. When the cellular tonicity is impaired, this equilibrium is lost and infection occurs. When the crypts are closed by secretion in the mouths of the crypts, a very active warfare between the retained microorganisms and the epithelium cells is begun. The cells throw off a poisonous ferment, whereas the bacteria throw off a toxin for the purpose of impairing the tonicity of the epithelium. If the seige is continued sufficiently long, the cells give way, and the infectious host penetrates the epithelial barrier and enters the deeper tissues of the tonsil, setting up more or less inflammation.

Along with this process the lacunae become dilated, and since they are surrounded only by the lymph follicles, the material from the latter structures contributes to the inflammatory leukocytosis. The follicles break down and give up the material they contain. Small cavities are formed, and later, owing to the destruction of the dividing septa, coalesce with the adjoining spaces.

It is this dilatation of the lacunae, coupled with the accumulation of secretion in the form of inspissated or even calcified concretions within the lacunae, that is responsible for the tendency to recurrence of tonsillar inflammation.

These concretions referred to frequently give rise to a number of symptoms, without producing an actual recurrence of the inflammation, and, as they are hidden away in the depths of the lacunae, they not infrequently escape observation for some time. The feeling of a foreign body; the constant desire to swallow; expectoration of mucus in the morning, occasionally mixed with small quantities of blood; and, finally, the subjective sense of a bad odor—these are the ambiguous symptoms complained of.

If, in such a case, the more common sources of these symptoms—catarrh of the nose and accessory sinuses; hypersecretion of the nasopharynx and similar conditions—are not found, the tonsils should be examined carefully, even if their external appearance presents nothing suspicious.

If the tonsils are manifestly altered, fissured, or partially destroyed; if small yellowish points are seen on the individual lacunae, the condition, of course, will not be overlooked."

We will now take up some considerations in regard to the tonsils individually.

At birth the palatal tonsil is completely covered by the plica tonsillaris, which is a continuation of the anterior pillar. Shortly after birth, before the second year, this membrane disappears, leaving the gland exposed. It may, however, be retained in greater or less extent. The plica supra-tonsillaris and the plica infra-tonsillaris are remnants of this membrane.

This tonsil in its normal condition is never seen above the faucial pillars. You should also remember that a small or submerged tonsil may be badly diseased; indeed it may be far more dangerous than the hypertrophied tonsil.

The supra-tonsillar fossa extends for a variable distance upward and inward into the soft palate. This fossa should always be examined with a bent probe or strabismus hook, as it is a favorite location for concretions. Fragments like grains of wheat may be expelled with much hawking and discomfort. Pain in the ear is often due to secretion pent up in the supratonsillar fossa.

The tonsil largely covered by the plicas is especially liable to infection, due to the imperfect drainage from the crypts, which leads to the loss of resistance. Following inflam-

mation the pillars and plicas may become adherent to the tonsil, closing some of the crypts and thus causing recurrent tonsillitis or abscess. Subsequent hypertrophy will carry the adherent pillars inward, and thus we may have marked hypertrophy with very little tonsillar tissue showing above the pillars.

We should not forget that at each act of swallowing the faucial pillars compress the tonsil, and at the same time, this action opens the mouth of the Eustachian tube, ventilating this tube and the middle ear. In cases where these pillars are closely adherent to the tonsil this action is interfered with.

In the case of a tonsil with diseased crypts and adherent pillars, it is not strange that it is kept constantly irritated and inflamed as a result of the continued action of the adherent pillars. It is in these cases that we are most likely to have involvement of the adjacent lymphatic glands.

In acute tonsillitis the inflammation may involve more specifically the crypts, giving lacunar tonsillitis; the mucus membrane, superficial tonsillitis; or mucus membrane and tonsillar tissue, parenchymatous tonsillitis.

We might mention as predisposing causes, the uric acid diathesis, gastro-intestinal disorders, exposure to cold, and to infectious organisms. The exciting causes are streptococci, staphylococci, Ebert's typhoid bacillus, diphtheria bacillus, influenza bacillus, Vincent's bacillus, pneumococci and various other organisms. The avenue of infection is through the crypts, the lymph stream, or broken-down epithelium of the tonsil.

A chronic hypertrophy is frequently seen as a result of slow infection, or following infectious diseases of childhood.

Acute tonsillitis is usually a mixed infection. In the superficial form we have diffuse redness, swelling, and exudation of serum, leucocytes, and broken-down epithelium. With involvement of the crypts, we have a fibrinous exudate with necrosis of the epithelium appearing as a yellowish or white accumulation within the crypts. If cheesy deposits have existed prior to the acute inflammation, the secretion of the crypts will possess a foul odor.

In the parenchymatous form there is a general inflammation of the glandular structures following the course of the blood vessels, and an exudation of the leucocytes and serum into

the tissues. If the infection is too profound a phlegmonous abscess may form.

Abscess in interstitial disease is much less common, and, usually, less severe than in lacunar inflammation. Abscess in the tonsil itself is less frequent than peritonsillar abscess.

Caseous concretions in the crypts of the upper part of the tonsil are the most frequent cause of peritonsillar abscess.

We may have an abscess in the substance of the tonsil, which, instead of opening towards the surface, may extend deep beyond the tonsil, forming a fistulous tract, which often requires more than the ordinary surgical procedure.

An abscess may open through a crypt, draining imperfectly, giving what is called by some "chronic tonsillar abscess."

Deep abscesses may occur, according to Grunwald, in the intermaxillary, nuchal and retropharyngeal regions, and even in the mediastinum, or along the vertebral column anteriorly.

In the cryptic form the disease may simulate diphtheria, but we have marked hyperaemia extending high up on the pillars and over the pharyngeal walls. The whitish exudate within the crypts is usually detected. Cases of acute tonsillitis, with membranous or pul-taceous deposit are generally due to mixed infection, and sometimes, without bacteriological test, one cannot tell whether or not the Klebs-Löffler bacillus is present.

Lacunar tonsillitis often gives rise to acute exacerbations. The patient sometimes has huskiness of the voice, and also fits of coughing, which result from local irritation in the tonsil. Recurrent quinsy may be seen also in case of submerged and ragged tonsils with adherent pillars.

Jonathan Wright says, "It seems likely that it is the small, sunken, ragged tonsils, and not the large tonsils which let through the dangerous germs." In this connection, we should remember that the efferent lymphatic vessels of the tonsil drain into the deep cervical chain underneath the sterno-mastoid muscle, and from thence into the thoracic glands, and finally into the thoracic duct. By this route infection may be carried to all parts of the body. The tonsil, under certain conditions, being peculiarly susceptible to infection, becomes therefore, the gateway of infec-

tion for a great variety of diseases extraneous to itself.

Ballenger says, "Perhaps the strongest indictment against the tonsil is that it is often the atrium of infection in pulmonary tuberculosis. Whether the route of infection is by the deep lymphatics and hilus of the lung, or the deep lymphatics and the parietal pleura at the apex is immaterial."

There is no doubt but that pulmonary and other types of tuberculosis often have their origin through the tonsils. Some writers report that from 4 to 10 per cent. of tonsils removed show tuberculous lesions. The crypts of tonsils in apparently healthy individuals may contain tubercle bacilli. Tuberculosis of the tonsil may be primary or secondary. The latter may be a direct infection from tuberculous sputa, or through the lymph channels and blood vessels.

Tuberculosis of the cervical lymphatics is usually due to the entrance of the bacilli and other micro-organisms through the tonsils. This is borne out clinically by the fact that suppurating or tuberculous glands of the neck are rarely found in phthisical patients. We may have a latent tuberculosis of the tonsils, which may continually infect the lymphatic glands of the neck as well as the deeper structures of the thoracic cavity. From this we see that in the treatment of tuberculosis affecting these parts, it is highly important to look after the tonsils. Layman claims that the tonsils are the portals of infection in about 90 per cent. of cases of tubercular cervical glands.

We may have degenerate tonsils originating insidiously and giving few local symptoms. Daniel Layman, in writing of degenerate tonsils, states that "the organs of structures affected may be neighboring or remote. The first include the nose, throat, larynx, ear, and cervical glands. Of the remote structures the joints, lungs and heart are most commonly affected. Where the infection has invaded the general system, the symptoms of a systemic disturbance are most paramount: these, too, may be vague and obscure in many cases."

In lacunar inflammations metastasis is the rule, while in the interstitial form pyaemic symptoms are more frequent, yet metastatic disease of the heart is occasionally seen.

In the interstitial form, polyarthritis and

inflammation of serous membranes are practically unknown.

As portals of entry for infectious material, the tonsils may admit to the system not only a toxæmia, but a bacteriaemia, and even a pyaemia. Degenerate tonsils may cause, according to Wood, tuberculosis of the lungs, with or without tuberculosis of the tonsils, rheumatism, general infection, nephritis, tenosynovitis, endocarditis, bronchitis, pneumonia, pleurisy, appendicitis, jaundice, phlebitis, meningitis, parotitis, orchitis, peritonitis and skin and eye lesions. We might also add pericarditis, myocarditis, influenza, chorea, neuritis, osteomyelitis, and various other streptococcic and staphylococcic septicaemias.

Osler says, "the tonsils are the usual seat of invasion of scarlet fever and diphtheria."

Nephritis is more frequently associated with tonsillitis than is generally supposed. P. K. Brown not only refers to a case of nephritis, but to a case of acute mania, one of septicaemia and one of leucaemia, all apparently traceable to diseased tonsils. * * * Pyaemic infarcts of the lungs have also been traced to this cause. * * *. One authority states that about 25 per cent. of cases of tonsillitis are associated with rheumatism.

That rheumatic fever has its origin in infection through the tonsils, is indicated by the fact that acute articular rheumatism is commonly observed, following an attack of acute tonsillitis. It is certain that many cases of so-called rheumatism are due to nothing more than a continued infection from diseased tonsils.

Toxaemia is a frequent condition, and because of its frequency, is the most important infection coming from the tonsils. Acute tonsillitis is not only a local disease, but a systemic infection as well.

Diseased palatal tonsils may cause a recurrent or constant cough, due to direct irritation to the larynx from detritus, or reflexly by pressure on the nerves. Earache and neuralgia may also be reflex symptoms. Tonsillo-liths are rarely found, and cause local and reflex irritations.

Of the benign neoplasms, papilloma is most frequent, and may be single or multiple. Like all papilloma, after removal, it has a tendency to return, and is sometimes apparently converted into a malignant growth. Because of

this tendency, they should be removed by a clean excision.

The tonsil may be the seat of a lymphadenoma and in every case of Hodgkins' disease it is advisable to examine the tonsil as it is frequently involved.

Of the malignant diseases, carcinoma is most frequent.

We must not forget that the tonsil may be the seat of luetic disease. In the primary lesion we have swelling of the tonsil, redness and infiltration of the glands of the neck. These glands are very hard to the touch. This luetic lesion comes on slowly and we have a circumscribed area of exudative necrosis and broken-down epithelium.

Mucus patches may be mistaken for acute tonsillitis.

We will now consider briefly the pharyngeal tonsil, or what is usually referred to as adenoids. It is very vascular, and is covered with ciliated columnar epithelium, which dips into the convolutions of the lymphoid tissue. Pleats and folds converge toward the lower centre, and between these are often seen deep recesses. The central recess is best marked and when closed by adhesions and filled with fluids, is sometimes called the pharyngeal bursa. Schwabach says that the true Tornwaldt's disease is a diseased and suppurating pharyngeal tonsil imbedded in a blind pouch, which is a remnant of the middle cleft.

Adenoids as we usually see them, are hypertrophied and pathological. They usually begin to show symptoms in the second or third year. From infection at birth or soon after, the normal lymphoid follicles become abnormal structures, causing hypertrophy. Holt and Jerecky mention their presence at birth, which leads to the conclusion that the condition of hypertrophy may be congenital. Colds, acute infectious diseases, and heredity, are aetiological factors.

According to Schmiegelow adenoids occur in 5 per cent. of children, and according to Kafeman, in 9 per cent. They are found in about half the cases of deaf mutes, and in 75 per cent. of idiots.

Adenoids are sometimes so greatly hypertrophied as to fill the naso-pharynx, and may extend downwards, pressing the soft palate down and forward, and, as I have seen it, may even become adherent to the palate.

This tonsil is rarely the seat of lacunar in-

flammation similar to that in the palatal tonsils, and caused by the same infecting organisms. This may occur jointly or independently. We now recognize a fever characteristic of childhood, which has heretofore been regarded as one of the ill-defined malarial affections, as being due to an infection through the adenoid growths in the epipharynx. Intercurrent attacks of acute inflammation of this tonsil are very common in children with adenoids. Suppuration may take place in or near the tonsil and give rise to severe general symptoms, sometimes suggestive of nasal diphtheria. An abscess usually discharges through the nose. Before discharging there is intense nasal obstruction.

Obstruction due to the hypertrophy of this tonsil, causes many local and systemic disturbances, which are familiar to you all, such as the "adenoid face," anemia, inattention, loss of memory, enuresis and stammering. The "nasal enuresis" and "nasal epilepsy" mentioned by various authors, are chiefly due to obstruction from adenoids. Juvenile headaches are frequently due to the same cause. Night terrors are present in about one-third of the cases, and are in all probability, due to reflex causes and to an excess of the half-way products of metabolism. Taste and smell may be impaired.

Sometimes the hypertrophy extends laterally until it is continuous with the tubal tonsils. This may obstruct the tube and interfere with its ventilation, or exert pressure on the vessels and thus lead to congestion of the tubes and middle ear.

The extension of swelling along the tubes may cause the ciliated epithelium to become atrophic or broken down by the pressure of the opposed walls, thus destroying the cilia and rendering infection easier. Infective material may be forced into the middle ear by sneezing and coughing, thus setting up suppuration of the ear with all its possible dangers.

Earache in children, with adenoids, usually indicates the urgent need of treatment. Aural complications are present in the majority of these adenoid cases. According to McBride and Turner, who analyzed 307 cases, 225 had involvement of the ear. Of these 144 were suppurative cases, and 111 were more or less deaf from non-suppurating ear disease.

Epipharyngeal catarrh is an almost con-

stant accompaniment, and this in itself is usually an indication that the pharyngeal vault should be cleansed of lymphoid tissue. In children mucus hanging on the posterior pharyngeal wall is most always an indication of adenoids. A cough on lying down at night is strongly suggestive. Attacks of so-called croup, from which children with adenoids suffer, are caused by the secretion dropping down on to the glottis during sleep, and chronic hoarseness in children is most frequently due to the same cause. Laryngismus stridulus and asthmatic attacks are sometimes excited by these conditions. Nasopharyngeal catarrh often causes an intractable cough, and is a source of infection not only of the ears, but of the larynx, bronchi and lungs.

An epipharyngeal catarrh in *adults* is often due to diseased remnants of adenoids. Encrustations may form, and after annoying hawking, they are dislodged. The remaining hypertrophied tonsil in adults is not so soft and lobular as in childhood, but often quite smooth and hard. In nervous women, headaches and neurasthenic symptoms are not uncommon in such cases, probably due to long continued irritation of a highly sensitive area.

A certain number of ocular symptoms and diseases may occur with sufficient frequency in children who have adenoids to warrant the assumption of a relationship between the nasopharyngeal and ocular conditions. These anomalies consist of epiphora, blepharitis, catarrhal, and more rarely purulent dacryocystitis, phlyctenular conjunctivitis and keratitis, subacute and chronic conjunctivitis.

The tubal tonsil is a small collection of adenoid tissue situated on the posterior lip of the trumpet-shaped opening of the eustachian tube, and extending backward toward Rosenmüller's fossa. When hypertrophied, it may be pedunculated, or it may extend backward into Rosenmüller's fossa and cover a part of the lateral naso-pharyngeal wall. In these cases we are likely to have tinnitus, and it is noticed that the hearing is influenced by changes in the weather, dust, and physical conditions.

In a large number of cases of chronic secretory and suppurative ears, pathological amounts of lymphoid tissue are present in Rosenmüller's fossa. The entire fossa may be filled with a soft friable mass, which is sound and

cannot be seen by the eye. The finger, however, sinks into and easily removes it. If we prevent or cure inflammation about the orifices, the eustachian tube will open physiologically and stay open. A relatively small amount of adenoid tissue in Rosenmüller's fossa can do greater mischief than a much larger amount at the vault of the nasopharynx, which is not causing obstruction.

Hypertrophy of the lingual tonsil may be so great as to press against the epiglottis, or may surmount its edge so that the secretion trickles into the larynx, causing cough.

This hypertrophy differs from that of other tonsils, in that it produces symptoms of a more nervous character. It is not uncommon that a diagnosis of hysteria or neurasthenia is made when an irritative cough has existed for years without any laryngeal or pharyngeal conditions being found, although as a matter of fact, the epiglottis is constantly being irritated by the enlarged lingual tonsil, which cannot be seen in an ordinary examination of the throat. On the other hand, the epiglottis may be wedged underneath the adenoid tissue and produce a reflex irritation in that way. In addition, the patient feels as if there was something in the throat, and they describe the well known "globus hystericus." Hypertrophy of this tonsil is more frequent, and gives most trouble, in women. Acute inflammation may cause glossitis and edema of the glottis.

While abscess of the lingual tonsil is rare, it is sometimes seen. I have seen as much as half an ounce of pus removed. The tonsil becomes greatly swollen, and the base of the tongue partakes of the inflammation. The decided dysphagia and lack of abnormalities in the pharynx is suggestive of abscess.

In hyperplasia, large venous bloodvessels or varices may be observed about the tonsil and base of the tongue.

This is most often observed in rheumatics, syphilitics and those addicted to the excessive use of alcohol.

Sometimes these varicosities cause a very obstinate cough.

Some cases of diphtheria having been recently reported, the Virginia Health Department urges upon local health officers the necessity of having a supply of diphtheria antitoxin on hand for emergency, as the benefits to be derived from its use depend upon the promptness with which it is administered.

PROLAPSUS UTERI.*

By C. S. LAWRENCE, M. D., Winston-Salem, N. C.

Prolapsus uteri is a time honored term for downward displacement of the uterus, and includes a number of anomalous positions of the uterus, vagina and adjacent organs that are etiologically quite different and represent entirely distinct clinical pictures. The physician must, therefore, never content himself with a diagnosis of "prolapse,"—he must include in his diagnosis the changes present in all the organs that take part in the prolapse. For this purpose, systematic examination of the vulva with floor of the perineum, pelvis, vagina, uterus, bladder and rectum, is necessary.

The various forms of complete prolapse represent the final stage of gradually developing changes, and are usually very much alike. Most cases of prolapse, however, that come under the physicians observation are incomplete, or still in the process of development, and differ in certain important points, until they finally reach the terminal stage, which is practically the same in all forms. As, however, the process may become arrested in any stage, it is not proper to base a diagnosis exclusively on the terminal condition; the transitional stage must also be described as separate and distinct clinical pictures, bearing in mind, however, that the transition to the final stage is often quite rapid.

Thus, one woman may suffer from moderate descent of the vagina and continue in the same condition until the end of her life, while in another patient a moderate degree of descent of the vagina (partial prolapse) may within a few months become converted into complete prolapse of the vagina and uterus. For this reason, I have subdivided the various clinical pictures, which are included under the generic term "prolapse."

The vagina takes part in all varieties of prolapse, and the following conditions may be distinguished:

- 1.—Descent of both vaginal walls.
- 2.—Prolapse of the anterior vaginal wall.
- 3.—Prolapse of the posterior vaginal wall.
- 4.—In prolapse of the entire vagina.
- 5.—Inversion of the vagina.

(a) In most cases both vaginal walls protrude into the introitus, as the woman bears

down the anterior, usually, more than the posterior. Circular descent is rare. The relaxed posterior columnæ rugarum is very often obliquely placed, because of unilateral vaginal lacerations.

(b) Prolapse of the anterior vaginal wall causes a tumor of variable size in front of the vulva consisting of the prolapsed anterior vaginal wall. The lateral portions of the vagina are drawn down somewhat by the tumor; the posterior vaginal wall in complicated cases, so far as its lower portion is concerned, remains completely *in situ*, while the posterior vaginal vault is inverted by the uterus, which also descends. A cystocele is always present and varies in size with the degree of vaginal prolapse.

(c) Prolapse of the posterior vaginal wall is one of the rare forms; it is observed in cases of ascites, or it may be forced down by coils of intestines in the cul-de-sac of Douglas; rare cases of congenital abnormal depth of Douglas space may cause prolapse of the posterior vaginal wall, the anterior wall remaining *in situ*.

(d) In prolapse of the entire vagina, the latter is entirely in front of the vulva.

(e) Inversion of the vagina is the result of primary descent of the uterus and begins at the vaginal vault, and, as the uterus descends, carries with it the vaginal vault, while the lower portion remains *in situ*.

As the parts that are prolapsed are no longer protected by the mucous membrane of the vagina, secondary changes take place, the mucous membrane becomes dry and horny-like skin, parts become fissured, crusts form and sometimes there is pigmentation, ulceration, and as a result of the constriction by the introitus there is edema and redundancy.

After investigating the condition of the vagina, the extent to which the uterus is prolapsed is noted.

We distinguish two different conditions:

1st.—Primary descent and prolapse of the uterus.

This occurs in conditions of relaxation of the peritoneum and its ligaments and of the pelvic connective tissue. It is, therefore, regularly associated with retroversion, which occurs from the same cause. The vaginal portion is in the pelvic axis below the interspinal line. The upper portion of the vagina is inverted while the introitus and the lower seg-

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ment may be normal; in most cases, however, the latter are also relaxed and displaced downward. In more severe grades of primary descent the vaginal portion enters the introitus, and in a fully developed total prolapse the uterus, covered with the completely inverted vagina, lies in front of the vagina, usually in retroversion, rarely in anteversion. In a small number of cases the uterine prolapse is associated only with prolapse of the posterior vaginal wall, while the anterior wall merely presents a slight degree of inversion from above.

2nd.—Secondary descent of the uterus with elongation of the cervix. This condition also is ushered in by a slight descent of the uterus with retroversion, due to relaxation of the peritoneal ligaments and pelvic connective tissue, which usually develops simultaneously with relaxation of the vaginal walls. As the relaxation continues, however, the uterus is drawn down by the prolapsed anterior vaginal wall, aided by a cystocele, which is connected over a wide extent with the anterior wall of the vagina and cervix. The uterus offers no resistance to the pull thus extended until the vaginal portion approximately reaches the introitus.

Further displacement is temporarily prevented by the peritoneal ligaments and pelvic connective tissue, and instead the cervix is slowly distended by the continued pull of the anterior vaginal wall and the cystocele; thus elongation of the cervix is produced.

Case I.—Mrs. E. C.; white; aged 32; para VI; native of North Carolina; occupation, housewife.

History.—Complains of pain low down in back and side, sensation of bearing down leucorrhœa, painful defecation and frequent micturition.

Examination Pelvic.—Retroversion and descent of uterine cervix at introitus and elongated cervix, lacerated and everted. Second degree laceration of perineum, slight rectocele.

Treatment.—Curettage; amputation of cervix; perineorrhaphy repair of levator ani muscle. Laparotomy—shortening of uterosacral and round ligaments.

Patient made good recovery and has remained well since December 14, 1909.

Case II.—Mrs. G.; white; aged 32; para IV;

native of North Carolina; occupation, domestic.

History.—Married 7 years, worked hard. Last confinement four months ago, which left her very weak. She suffered with a severe diarrhoea, and was worried with her sick baby, which died at age of two weeks. A few days later, she got out of bed and walked about the room, becoming alarmed when she noticed the womb had come out of the vagina. This condition of affairs kept up for four months, when she was referred to me for operation, which was done July 29, 1910.

Examination Pelvic.—Complete laceration of the perineum. Cervix was at introitus vaginæ, and with vulsella could be readily brought out of the vagina. Bladder and urethra in very good condition, save a slight cystocele.

Treatment.—Curettage; perineorrhaphy with repair of levator and muscles; laparotomy—shortening of the uterosacral and round ligaments, ventro-suspension. Patient made good recovery, and has remained well, doing her domestic work.

In treatment of these cases, the levator ani muscles, which had been separated in childbirth, were in each instance sought out and approximated, making a good substantial pelvic floor, the uterosacral ligaments were shortened after the method of Bovee, bringing the cervix well back into the hollow of the sacrum. The round ligaments were shortened by the Baldy method, which throws the fundus uteri well forward, and the ventro-suspension after Kelly.

To me this seems to be the ideal treatment in child-bearing women. For women past the menopause, I would suggest (besides taking in the slack in all the uterine supports) abdominal fixation.

In cases with elongated cervix, the latter must be amputated, in addition to above treatment.

In those cases of marked enlargement of the body of the uterus, a V-shaped section may be removed from the corpus uteri, and vaginal fixation performed after the method of Schaudé and Wertheim.

If possible, in all cases of child-bearing women, I think the uterus should be saved, as well as in women past the menopause, but there are certain classes of cases of long standing, in old women, with marked redundancy

of the cervix and vaginal walls, with ulceration, which require hysterectomy. Where this procedure is indicated, the method of Dr. Thos. S. Cullen, described in *Surgery, Gynecology and Obstetrics*, March, 1910—seems to be the proper one.

THE PRACTICE OF MEDICINE IN THE COUNTRY.*

By CHARLES E. DYER, M. D., Ivanhoe, Va.

Fifty years ago when medicine and surgery were making its most marked advances, the physician of the rural and country districts was indeed a contributing factor, but for the past few years the sensational discoveries have as a rule originated in the cities.

At one time the profession was that of envy and hatred among each other; however, we find to-day, that in the cities most differences have been settled, friendship prevails, and often a fellow physician is one's best friend and is always ready to promote his welfare and happiness, while in the country they continue to travel in the same old rut, and do not enjoy a position of respect that should predominate. Any country doctor, if he has taken time to observe, can easily see that such is the case.

I desire to discuss several factors as I see them, but the main cause is our failure to stand together in harmony, union and friendship; this is our urgent need, and when it is obtained the practice of medicine will be more a pleasure and a greater financial success to all.

"DEAD BEATS."

Years ago every man tried hard to pay his bills, but to-day a physician can easily decide that 30 per cent. do everything in their power to keep from paying. They have hard luck in every conceivable manner, from paying on a sewing machine or having a picture enlarged to the balance on his place; however, his promises are generous, but seldom net you the amount of your bill. When you will no longer answer his calls, regardless of the numerous services and favors you have given him, he becomes your enemy and no longer speaks to you, calls another physician with whom you are not on good terms, ridicules you to every one he meets, and praises the second physician equally as faithfully. This dead-beating is a problem that is growing each day, and the

country profession has no troublesome diagnosis to make, but the cure is urgently needed. We are not only doing ourselves an injustice, but the dead-beat also; we are encouraging him in dishonesty; he is encouraging others to do likewise, which will lead him on to other crimes. When we stand as a unit and, with a list of all the dead-beats easily accessible, refer him to his former physician, and refuse to go unless his bills are paid or a plausible excuse given, this class will again respect us, and their return to the roll of good citizens will be speedy. I have known men to get out of paying the physician, and then announce the fact to their friends with as much enthusiasm as if they were real heroes. There is no class of people that deserves more respect than the honest poor, who tries to pay but cannot, who makes great efforts to no avail. It should be a pleasure for us to help them when medical attention is needed, but the class that could pay and does not is the bull that we should take by the horns.

FEES.

We, as country physicians, should have an understanding as to fees, and charge a uniform price; by strictly adhering to this rule, all concerned would be greatly benefited. The merchant will cut prices, but not below cost, while some physicians instead of charging 50 cent per mile and \$1.00 for prescribing, \$10.00 for a labor case, and so much an hour after the first eight hours, \$5.00 for administering an anesthetic, etc., will cut half or a third, anything to gain practice, when in reality he is doing himself a financial injury and lowering himself and his profession in the eyes of the laity, making himself a worse example than the merchant, and yet he would not like a suggestion of similarity. This mistake can be corrected by organization of country and smaller societies, thereby bringing the members together where they can discuss the subject and agree. In localities of several States, organizations for this purpose are doing great good, yet in some of the counties of the great Southwest, we have no societies for any such purpose. It frequently happens that Dr. A. is not called to a labor case because he charges \$10.00, and Dr. B. is not called either because he charges \$5.00, while Dr. C. gets the case because he does the work still cheaper. The cutting of fees is not understood by the laity, because many think that Dr. C. charges

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enough, while Drs. A. and B. are unreasonable.

DRUGS.

Owing to the fact that reputable drug-stores are miles away, it is necessary for each physician to do his own dispensing, and it is his duty to carry in stock only the best obtainable drugs, and not be induced to buy from second rate houses because they are cheap; they are uncertain in strength and inferior in quality. I have no more respect for the doctor who deals in cheap drugs than I have for the so-called druggist who deals exclusively in patent medicines; however, very few physicians have this weakness—the great majority must have the best. But notice that you do not pay an exorbitant price for the best, as drugs can be purchased direct from the factory of the most reliable firms at from 25 to 40 per cent. and 10 per cent. discount, freight paid, which is 10 per cent. better than the jobbers will do; then there are no refuse articles or substitutes, and incidentally the 10 per cent. is saved, and the druggist has no moral right to make 10 cents on each dollar you dispense.

CONSULTATION.

There is a great tendency among country people to desert the farms and go to the city. The physician is no exception to the rule; however, some of the best stay in the country from choice, while others are kept too poor to get away. Many practice in the country long enough to get a reputation half established, and when consultation is suggested he is the first thought, but as he resides 20 or 40 miles away, he can be of no real service to you or the patient, yet the earnest pleadings of the family often bring him in consultation, when he has, or should have, patients of his own to attend in his new locality. With friendship and harmony in the country, one who lives near could be called on short notice as often as necessary, and together work out the puzzling details, save the patients' life, and whatever credit is derived stays in the country where it belongs.

On the other hand, we will say that brother Hayseed has a typhoid case, just plain uncomplicated typhoid. Instead of showing improvement in six or eight days, it goes on into the second or third week, and the family becomes restless, which increases after every possible explanation you offer and possibly a dose of

bromide to each anxious member. They suggest consultation with a doctor who resides in the city, or call you over the 'phone early some morning and tell you to meet a physician of their selection from the city at 2 P. M. You are not pleased with their formality, but are on the spot promptly at 2 P. M., and there you wait until six before your consultant arrives, while other patients are needing you, and are angry because you do not come when expected. However, the fine automobile arrives and the patient is carefully examined, a limber-jawed prognosis is offered and the doctor dwells at length on his success with typhoid, inquires as to medicine and makes the following changes; viz., nine drops of turpentine t. i. d., instead of eight; substitutes digestive wine as a vehicle for the HCl., instead of essence of pepsin; changes the dose of hydrochloric acid from 10 minims to the heroic dose of 12; instead of bathing the patient when the temperature is at 102.5 degrees, it must go one-fifth degree higher; recommends castor oil for constipation instead of the enema, and after making a few other august changes of like magnitude, pulls his cigar and the 25 is made, which is promptly paid. Then he hurries away to fill some important social or political engagement. A few nights later your patient gets worse and the country doctor must go, regardless of the weather or the darkness of the night, and there nurse the case and lose sleep while your consultant is quietly sleeping and with added pleasure as he dreams about that 25. In all, he is called 3 or 4 times, netting him \$75 or \$100. The patient finally gets well and your consultant gets the credit and all the money they have on hand. You do the work, have the patient on your mind constantly for 6 weeks, with the responsibility, have made 40 visits and booked \$80.00, have furnished the drugs, but must wait and wait for the cash, and finally compromise by taking a stack of hay. This is no over-drawn picture; such has come under my personal observation, and every country physician present knows of similar or worse cases.

If time would permit, I would like to relate several consultations in which I have participated, however, one will suffice. I attended a man, aged 65, ill with typhoid for two weeks. Suddenly one night he became worse and I asked for a consultation with a physician who lived three miles away. He responded

promptly. In addition to typhoid, he had developed a congestion of the right lung. Treatment was easily agreed upon. The next day the family sent for a city physician and I sent for the first consultant. The second consultant said there was no typhoid but pneumonia, and changed treatment. Patient did not improve, and three days later another city physician was called. In the meantime the congestion cleared up. The third consultant could not find any pneumonia at all, and said it was as plain a case of typhoid as he ever saw. You may draw your own conclusion.

I might add that in all, 6 physicians had a hand in the pie—and the patient died. Country physicians, is it not time for us to cast aside our 15 cent prejudice and stand together for harmony?

SURGERY.

In college nearly as many hours are devoted to surgery as medicine; therefore, we should be as strong surgically as medically. Not only the diagnosis is thoroughly drilled, but the actual operative cure, even the length of each incision and number and names of instruments. Then, surely, we should not confine our surgical career to opening stone bruises and picking out splinters, but should advance step by step until the minor surgery of the country is done at home. The surgeons in the hospitals do not especially desire this work. The emergency work is attempted, and often with startling results at home. Horrible accidents that occur at public works, strangulated hernia, typhoid perforation, puerperal eclampsia, placenta previa, Caesarean section, large appendiceal abscesses, and ileus, seldom can be moved to the hospital, while simple operations as appendectomy of 24 to 48 hours duration, hernia, curettement, old lacerations of perineum and cervix tumors, etc., are taken to the hospital. No physician on finding a strangulation of 24 hours standing would think of taking the patient to the hospital, when it would require 40 more hours, which would mean death, but does the operation at home, though having done so few operations, it will be done at a risk; while the first thought in seeing a simple case of appendicitis or hernia would be a trip to the hospital.

A surgeon in Chicago, I believe, has operated for appendicitis with his eyes closed. Surely his class-mates in the country could do as well with their eyes open.

So many cases could be relieved by minor operations, and then we would be relieved of forever treating the surgical condition, medically; for example, hemorrhoids, curettement, etc. Again, the poor class have not the means to go to the hospital, and if they did have, their greatest earthly hope is to die at home; consequently, many go from month to month unrelieved surgically, when their family physician, the one they know and trust, could do the operation at home with the aid of one or two nearby physicians.

With the proper unity in the country profession, one doctor could administer the anesthetic, another most suited to the work do the surgery, or each one operate on his own cases. So many operations can be done in the home, possibly not as well and with less pomp and splendor, but cured, and this is the main object in view.

Quite a few of the best surgeons strongly advocate more surgical work in the country; advise us and aid us, yet we sit around, simply afraid to do it. On the other hand, not long since I read quite a lengthy and pathetic article on what to do with convalescent surgical patients. There seemed to be a dread in letting the patient go back to the family physician, failing to remember that possibly there was a hesitation on the part of the physician before the patient was sent to his hospital. This surgeon need not worry, for the patient will date everything from the time he was at the hospital. It is a frequent expression that an event was either "6 years before" or "3 years after I was in the hospital." Yes, he should unhesitatingly let the patient go back to the one who nursed the case, lost hours of sleep applying applications, working with not a fibre at ease to tide the patient over a severe attack, who made the diagnosis for him, and through whose influence the patient entered the hospital, and who accompanied the patient at a financial loss, one who deserves much, but gets little—*The Plain Country Doctor*.

DIAGNOSIS OF DISEASES OF THE EAR WITH SPECIAL REFERENCE TO SYMPTOMATOLOGY.*

By J. J. CRUME, M. D., Amarillo Texas.

In presenting a paper to this Association on this subject, it shall be my purpose to give

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as practical an analysis of the symptoms accompanying the various pathological conditions as possible in a brief, concise way, in order that the aurist may the more easily arrive at a correct diagnosis of his respective cases.

Ninety-five per cent. of the patients who present themselves to us with ear troubles give a history of pain, discharge, or deafness.

There are four questions you are expected to answer after only a superficial, much less a thorough examination:

- (1) What is the matter with me?
- (2) Can you cure me?
- (3) How long will it take?
- (4) What will it cost?

We will have to be able to answer the first one before we can approximately answer the last three.

We will first consider pain, its cause, character and significance.

Pain.—When unaccompanied by other symptoms, it is insignificant as a diagnostic factor. In fact, it may be misleading, but when attended by other symptoms, plays its part in the role of diagnosis.

Pain, alone, only tells us that a wrong exists, but does not point it out. Nor does the absence of it argue that we have no pathology in the ear. It may be produced—

- (1) By a local inflammatory condition in the middle ear.
- (2) It may be reflex.

If reflex, the seat of trouble will nearly always be located in the teeth, tonsils, or nose, and will radiate *toward* the ear.

If local, the pain may be deep seated or superficial, constant or intermittent, and radiates *from* the ear.

If pain is due to some local inflammatory trouble, you will in almost every case, first have a simple otitis media, which may be the result of atmospheric influences, colds, influenza or adenoids. But in most cases it is the product of a nasopharyngitis transmitted through the eustachian tube to the middle ear.

Pain, acute, lancinating, indicates a recent inflammatory process, and is usually in the superficial tissues. If throbbing, there is usually an exudate of some character pressing upon the nerve filaments, either serum or pus, depending upon the acuteness or chronicity of the disease.

Pain radiating upward, forward or down-

ward is indicative of mastoiditis. I call to mind a mastoid case, a lady, who gave no history of pain, except in the temporal region. It was relieved by a mastoidectomy.

Usually pain may be elicited by pressure over the mastoid antrum, tip or digastric fossa, but not always.

In mastoiditis, when pain is present, it is usually deep-seated, constant and not easily relieved by anodynes.

Discharge.—The discharge may be serous, muco-serous, purulent or muco-purulent in character. If serous, the trouble is simple otitis media, resulting from some throat or nasal trouble, as previously indicated. If neglected, it may become sub-acute or chronic.

Purulent otitis media is always of bacterial origin, and comes by the usual route as named above. Staphylococcus, streptococcus, pneumococcus, influenza bacillus, and mixed infection are given as causes. Atmospheric change, sudden chilling, nephritis, diabetes, and so forth may contribute, but germs are necessary.

By irritation, produced by the presence of pus, the tube, tympanic cavity, drum membrane, antrum and mastoid cells become involved. The discharge may be thick or thin, purulent, muco-purulent or bloody.

The following *complications* may arise, and I will say that the complications are to be more dreaded than the primary lesion:

- (1) Sloughing of mucous membrane and necrosis of bone.
- (2) Destruction of drum membrane.
- (3) Loss of one or both larger ossicles.
- (4) Filling of cavity with granulating tissue or polypi.
- (5) Extension of active process to attic, antrum and mastoid.
- (6) Destruction of mastoid cells.
- (7) Extension to brain or sinuses.
- (8) Extension to labyrinth.

If mastoiditis is suspected, examine for bone debris. Transilluminate disease obstructs passage of light through the mastoid.

Indications for mastoid operation following acute otitis media are:

- (1) Pain continued behind the ear.
- (2) Swelling behind the ear or in the neck.
- (3) Swelling of the wall of the posterior superior internal portion of the external auditory meatus.
- (4) Evidence of pus under skin or in neck.

- (5) Extension of active process to attic, antrum and mastoid.
- (6) Destruction of mastoid cells.
- (7) Indications of brain, sinus or labyrinthine complications.
- (8) Continued suppuration.

Indications for mastoid operation following chronic purulent otitis media are:

- (1) Acute exacerbations of chronic otitis media.
- (2) Continued pain in ear or side of head.
- (3) Recurrence of pain associated with intermittent discharge.
- (4) Sinus into mastoid, external or in meatus.
- (5) Intractable discharge.
- (6) Indications of brain, sinus or labyrinthine complications.
- (7) Cholesteatoma.
- (8) Evidence of necrosis in attic or antrum.

Contra-indications:

When patient has symptoms of meningitis or pneumonia.

Deafness.—For convenience and diagnostic purposes in reference to hearing, we will divide the ear into two parts, namely, the conducting apparatus, and the perceiving apparatus.

The conducting apparatus includes the external auditory canal, middle ear and all its attributes external to the foot plate of the stapes.

The perceiving apparatus includes the labyrinth, auditory nerve and brain cells.

So long as the defect is located in the conducting apparatus, we can usually hold out some hope to our patient, but not so if in the perceiving apparatus.

In the former, partial deafness may be produced:

- (1) By impaction in the external auditory canal.
- (2) Pus, granulating tissue and so forth in the middle ear.
- (3) Closure of eustachian tube by thickened mucous membrane, adenoids and so forth.
- (4) Caries of the ossicles.
- (5) Destruction of drum membrane and so forth.

If perforation is permanent, cholesteatoma is likely to supervene, diagnosed by epithelial casts in discharge.

If there is multiple perforation of drum, suspect tuberculosis.

If the labyrinth is defective, it may be the result of pus constantly in the middle ear, the infection eating its way through the oval window, round window, or through the bony plate.

The cochlea may also be the primary seat of the trouble.

Now, as an aid to the location of the defect in hearing, there are certain principles with reference to sound conduction and hearing we must understand and intelligently apply.

(1) In air conduction, sound waves pass through the auditory canal and middle ear to the sound perceiving apparatus.

(2) In bone conduction, sound passes direct through the bone to the perceiving apparatus and not through the auditory canal and middle ear.

(3) For perfect air conduction there must be a patent canal, a normal middle ear, and a perfect internal ear.

(4) For perfect bone conduction the perceiving apparatus must be perfect regardless of the canal or middle ear.

(5) Impairment of air conduction may be caused by disease of canal, middle ear or sound perceiving apparatus.

(6) Impairment of bone conduction is due to loss of function of the sound perceiving apparatus.

(7) When air conducting apparatus is diseased, the bone conduction is increased.

(8) When the perceiving apparatus is diseased, both bone and air conduction is diminished.

(9) Under normal conditions bone conduction is about one-half that of air conduction.

(10) When the perceiving apparatus is diseased, as a rule, there is more loss for high than for low tones.

(11) When the conducting apparatus is diseased, as a rule, there is more loss for low than for high tones.

Therefore, loss of air conduction without loss of bone conduction indicates a middle ear lesion, while loss of bone conduction indicates an internal ear lesion.

In applying the above principles the tuning forks are brought into use.

If we suspect otosclerosis, Gelle's test is of prime importance; also, the detection of tone islands by the use of a wide range of forks or the Galton whistle.

Tone islands and a transparent drum membrane are almost pathognomonic of labyrinthine disease.

I consider the application of these tests, in cases of defective hearing, and a record of same, made before instituting treatment quite important, that you may know just the extent of improvement obtained by treatment.

A close observance to careful tests with a record of same is often-times extremely essential, when made for applications for public or corporation service, a record of which would be of great value in case of accident, wherein the employe sues for damages, claiming his hearing was impaired as a result of the accident.

By your record you may be able to verify or disprove his statement, and relieve yourself of considerable embarrassment.

RANDOM REMARKS ON SYPHILIS AND SALVARSAN.

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"*Therapia sterilizans magna*," that fascinating introduction salvarsan had to America, has at last been dispelled by our saner realization that this remedy, while a great therapeutic triumph against syphilis, fails signally to cure this disease as its discoverer, Prof. Ehrlich, would have us believe. We, who have injected our patients only to have them develop cutaneous lesions in the course of two or three months, are in a position to say whether this compound will cure and not the laboratory worker under his spell of enthusiasm.

If it be true that 606 with one injection sterilizes the blood of animals infected by trypanosoma, spirillum, or spirochaeta, there can be but two deductions, either that animals are not very susceptible to syphilis and have not the usual virulent form found in man, or the dose was much larger or capable of producing more antibodies in an animal; in other words, more easily exciting an acquired or low form of natural immunity to the disease found in these animals.

Now that Ehrlich's later modification of 606, or H. G. 606, is being extensively used, it amounts to an acknowledgment on the discoverer's part that his deductions as to the merits of salvarsan were rather hasty, especially in its application to man. Fordyce's opinion that

the impression so widely prevalent when Ehrlich first announced his discovery that it would with one dose be possible to eradicate infection has been proven to be premature, and this by the first American investigator after his first two optimistic articles on the subject is but a sample of the reluctant changes dermatologists throughout this country are coming to.

Pitiful is the condition of the syphilitic who, after reading pages in the magazines and having patience preached to him by his physician to wait a few more days for the arrival of the wonderful 606 and be cured with one dose, at last gets his injection, is sent out as cured and perhaps back to his family to infect a wife, or to the pie counter to infect someone else. Out of 21 cases I have injected, at least one-third show evidences of returning syphilis, and this in less than four months. What will be the percentage in one year; two years, and three years. Then imagine the mental suffering these neurasthenics must bear with a recurrence after this supposed cure enough to make them feel that they have been fleeced in the most conventional style.

Another unfortunate thing which takes in the gaping public is that some of our leading societies are made the butt of these pyrotechnics, an example of such having occurred in this city lately. Less these ideas of cure be taken as a tirade against the remedy I will repeat that for relieving malignant syphilis and for quick action in viscera or brain gumma, we have a wonderful remedy, but for cures the original must be given again and again, or the patient be once more put on his regular mercurial diet. This evolves another aspect to the disease.

If you must give several doses of the remedy for a cure, you do so in the face of the inventor's protest, for was it not his first instructions to produce major sterilization with the first injection, else we develop a host of arsenical strain spirochaetes which will resist even larger doses of arsenic.

There can be no doubt that in emergency cases salvarsan will always be given, but until we are sure as to the amount of drug, number of doses, length of time to effect a cure no conscientious physician in the face of recent developments can give his patient a guarantee of cure. It may be that we are unable to give one, two or three doses large enough to de-

stroy the spirochaeta pallida at once, only then to find we have developed a line of spirochaetes on which arsenic preparations have no effect. This would indeed place the physician between the devil and the deep sea, so far as 606 treatment is concerned, but it is exactly what we might expect when we remember Erlich's first warning, i. e., to produce major sterilization with the first dose, which is now known to be an impossibility. Let us hope such will not be the case, for if salvarsan can cure syphilis in one year with a dozen injections, it will still be a wonderful discovery. One thing that is demonstrated in this country is that syphilitics continue to improve under mercury after 606 is given, and it may prove a blessing, for, should salvarsan in multiple doses fail to cure, and at the same time the spirochaete develop a tolerance to the drug, we can still fall back on our old friend mercury.

Fortunately, Ehrlich has had his preparation patented and inventive minds cannot flood the market and literature with this and that modification (except the various cacodylates, which, let us hope for the good of our syphilitic patients, will soon be forgotten), but the methods of administration have not been so fortunate. Every day gives us the benefit of this or that man's hobby, until now it has as many different forms of injection as mercury. For practical reasons, only two ways of injection need be considered, deep muscular and intravenous, the subcutaneous no longer being used on account of its greater tendency to abcess, pain and swelling; so it will be only necessary to mention the deep muscular and venous route for injection.

Now that the smaller doses of the drug are no longer used, as injections of .6 gr., larger doses will be considered. Experience has taught us some plain facts with these injections which are quite worth while mentioning. First, that the powder is an acid compound, and to make it conform more with fluids of the body, a form therefore to be more quickly absorbed, we must neutralize or change the reaction to alkaline; second, that the neutral suspension gives the least pain of any muscular injection, but on the other hand is slowly absorbed; being in suspension and not solution, and a small amount of menstruum—10 to 15 c. c.—being used, there is greater tendency to the formation of nodes and indurations; third, that intravenous injection offers

us the quickest method of relieving emergency cases, as gumma of the brain or viscera, saving two or three days, but after the fourth day all traces of arsenic in the urine have disappeared, showing that its action has spent itself.

Now, simply glancing at the pathology of the syphilitic granulomata will convince us of the unthoroughness of one dose intravenously. In the nodular lesion, the microscopic picture is frequently that of a diffused infiltration of the corium showing alternating dark and light areas. This mottling is due to changes which the vessels have undergone, the light areas representing all gradations from choked-up vessel's lumen with swollen and proliferating cells to distinct giant cell formation, while the dark areas are made up of an inflammatory infiltration.

To most physicians it will appear the height of folly with one intravenous injection to absorb this obliterating arteritis and allow the drug to reach all the offending spirochaetes when the urine shows that after four days the drug has been eliminated from the body. This is the exact reason why iodide of potash is given in the late stages of syphilis, especially the tubercular and the tubercular serpiginous lesions which are almost exclusively made up of giant cells, occluding and thrombosing the afferent vessels. The deep muscular injection had been used from the first, all forms and reactions being given; the practice of using methyl alcohol, as a solvent and a long process of centrifuging, titration, etc., we now know to be unnecessary. Besides, some look upon methyl alcohol as dangerous unless perfectly pure and in small quantities, as was first advocated. At first it was given in acid reaction, then alkaline, then neutral suspension to prevent pain, and now, finally, after trying all reactions, we go back to the alkaline, which is the only one to stand the test of time. The only difference is that it produces a solution, not a suspension, if necessary increasing the menstruum up to 20 or 30 c. c. Experience has shown us that the more concentrated the mixture and less menstruum used, the greater the tendency to painful nodes, etc. The practice of giving it in oily mixtures should be condemned for the reason that it is a highly concentrated suspension, only 5 or 6 c. c. of menstruum being used, besides depending largely on the antiseptic properties of camphor, guaiacol and other drugs to produce

an aseptic injection. It is true that we inject both soluble and insoluble preparations of mercury in albolene, prepared somewhat like this, but most of us will agree that the bactericidal effect of a 10 per cent. mixture of mercury and a mixture guaiacol, camphor and salvarsan will be quite different.

The greatest diversity of opinion with this new remedy seems to be in regard to its effect on the nervous parasyphilides, tabes and paresis. Of course there will be some who will try to relieve advanced cases of these two diseases simply because the patient insists, but outside of its effect as a placebo, we know the effects to be nil. In the incipient cases, especially girdle pains of tabes, there is always danger that the reaction sometimes following an injection will increase rather than allay the suffering, yet some have reported relief after one dose of the drug.

All agree that the time to treat these cases is before the connective tissue infiltrate obliterates the nervous cells and tracts. Now that it has been proven that these nervous phenomena are preceded by a chronic syphilitic meningitis and that all nervous disturbances of a syphilitic origin are accompanied by a chronic meningitis, Vincent suggests a lumbar puncture in these old cases, finding in cases of the most incipient nervous disturbances a rachidian lymphocytosis. He found by lumbar puncture that this chronic syphilitic meningitis was so constantly a forerunner to connective tissue involvement of the brain and cord that he was able to prognosticate the resulting subsequent tabes and paresis. If it be true that we have a method of discovering which of our syphilitics will be tabetics and paretics, it will prove a prophylactic measure against these two diseases equal to vaccination in variola.

Equally reticent are the ophthalmologists; the latest reports show that salvarsan is being used in the eye clinics abroad. Grosz of Budapest successfully treated iritis, irido-keratitis, scleritis, choroido-retinitis and keratitis, thus drawing the conclusion that 606 is not contra-indicated in syphilitic eye conditions. Schanz has seen no evidences of ocular changes following salvarsan, and holds that if it possesses a similar toxicity to atoxyl, symptoms of amblyopia, it would have developed before six months as his 100 atoxyl cases did. His experience was that in the usual toxic condition the

pupils soon fail to respond to light, this not being observed in atoxyl, and since atoxyl does not influence the optic nerve in the manner of toxæmias, it seems plausible to conclude that it would not be concerned in activating a pre-existing lesion of that nerve. He also believes that salvarsan would have the same effect and be incapable of exerting a supplementary action to the syphilitic process, all of which points to the fact that we have not the cause to fear serious eye symptoms from salvarsan, else they would have been reported long since as the atoxyl cases were, and that it is incapable of exciting a latent infection or sensitizing the optic nerve to a future nerve involvement. So many of these cases have been given one injection and turned out on the community as cured or almost cured that hundreds laboring under this impression will have recurrences of all descriptions. It may be that one injection will be enough to tide them over the early secondary outbreak, and we may look instead for all forms of late secondary or tertiary lesions, as deep and superficial gumma, slow spreading ulcerations of all descriptions, just the ones some general practitioners and most genito-urinary men fail to diagnose correctly and try to heal with x-ray, zinc ointment. etc. These men should be made to understand that in the great majority of instances the history they try to elicit from these cases amounts to nothing, and should give up their principal asset to making a diagnosis of syphilis, as "does it itch?" "how long has it been since you had a chancre?" "was your throat sore?" and above all, note as to enlarged glands, which, unless the physician knows to be only a recent occurrence, means almost nothing as a diagnosis. (A glance at Ditt-rich's and other statistics proves that.)

Another popular idea that emaciation is always the accompaniment of hereditary syphilis should be corrected. One must not look for the little withered old man of the text-books as frequently these are plump, healthy looking infants. Improper feeding in a syphilitic child will, as in the case of any child, produce a pitiful picture, but an infant at the breast of a well-nourished, though infected mother, gives you another view. Here, again, the history cannot be relied upon, for some mothers are only too glad to take a sickly child from the breast, no matter what it may have.

Another deplorable fact in the management

of syphilitics is the habit of giving iodide of potash or mixed treatment too early in the disease. Remember iodide of potash does not cure syphilis; it never did and never will. It is the mercury we want and plenty of it, *not one grain of proto-iodide*, as some of my consultants tell me they are in the habit of giving, but $2\frac{1}{2}$ and $3\frac{1}{2}$ grains a day. Most syphilitics in the early stages can eat mercury for the first month or so and do not forget that the therapeutic test of mercury is out of date, because it is now considered as much a specific for lichen planus and some other skin diseases (which to the general practitioner, are identical to syphilis), as it is for syphilis.

The Wassermann reaction is the test for syphilis, but if you have tried to cure your suspicious lesions with mercury, you not only have failed to make your diagnosis, but you have destroyed this scientific mode of making a correct diagnosis, and you cannot be positive in your own mind that your patient has syphilis.

CONCLUSIONS.

1. Do not give any treatment for syphilis unless you are positive of your diagnosis, and never rely on a syphilitic's history.

2. Use the Wassermann reaction wherever possible.

3. Mercury and salvarsan relieve other skin diseases besides syphilis, as lichen planus and psoriasis.

Gain a clear knowledge of the latter lesion of this disease. I find that many physicians do not properly understand the significance of grouping the various shaped lesions common to this stage of syphilis but which to the trained eye are typical, in fact, about the only lesions of syphilis not simulated by other diseases.

The Burlington.

Clinical : ports.

GONORRHOEA IN THE FEMALE, WITH REPORT OF A CASE.*

By WM. CLAIBORNE POWELL, M. D., Petersburg, Va.

Gonorrhoea is a subject familiar to many of us, but I think that most of you will agree that it is not seen as often in the female as in the male; that is, it is not detected, and is often overlooked. There are many conditions

in the female that may resemble gonorrhoea and may be diagnosed as leucorrhoea, or a simple vaginal discharge. The symptoms, diagnosis, prognosis, and treatment of gonorrhoea are too familiar to all for me to repeat them here, and may be read in any textbook, so I will pass on to the report of my case.

The case I have to report to-day is one which recently came under my observation, and in which there was involved the question of diagnosis. The patient, a white girl, twelve years of age, was taken sick on Saturday, May 13th, and had been seen by four (4) doctors in as many days; I was the fifth one called into the case. Two of the doctors had made a diagnosis of appendicitis, and advised an immediate operation, the other two dissenting from their opinion.

Upon examination I found a distended bladder, temperature 99.2° F., pulse 100, respiration 24, and upon inquiry, elicited the information that her bowels had not moved, nor had she passed her water for two (2) days. She had suffered intense pain, pulling her hair and screaming so loud that she could be heard across the street.

Upon catheterization I drew from her bladder, by measurement, thirty four ounces of turbid, dark colored urine, entirely relieving her pain, which she did not complain of afterwards. While being catheterized, I purposely exposed her, in order to see and cleanse the meatus urinarius before introducing the catheter, and observed a profuse discharge, which appeared to come from the urethra, producing an excoriation of the skin of the vulva, inner side of the thighs and buttocks. I secured a smear from the urethra, and, upon examination under the microscope, gonococci were found. This girl evidently had a gonorrhoeal urethritis extending to the bladder, producing a cystitis with retention of urine, which was later confirmed by a bacteriological examination. She was entirely relieved of her pain by catheterization. Temperature, pulse and respiration were normal within twenty-four hours. I put her on specific treatment, which she is still taking, and she has, apparently, made a good recovery.

My purpose in reporting this case is not to present anything new, but to emphasize the importance of making a careful and thorough examination and correct diagnosis in every

*Read before the Southside Virginia Medical Association, at Petersburg, Va., June 13, 1911.

case we, as physicians, are called upon to treat.

2 Bank Street.

A CASE OF LARYNGO-ESOPHAGEAL FISTULA CURED BY LARYNGOSTOMY AND DIRECT TREATMENT OF THE FISTULA THROUGH THE EXPOSED LARYNGEAL WALL.*

By J. A. WHITE, A. M., M. D., Richmond, Va.
Professor of Ophthalmology, University College of Medicine.

This patient came to me in August, 1908, with hoarseness and difficulty of breathing. He had a scar on the neck from a former tracheotomy and coughed a great deal, the secretion showing staphylococci and pneumococci. There was a small fistulous tract from the scar upward and outward to the left, from which foul smelling pus exuded. There was also some dysphagia. Examination of the larynx showed paralysis of both abductors. I diagnosed subglottic abscess from caries of the posterior part of the cricoid cartilage which caused the abductor paralysis, but could not discover the cause of the caries. There was no evidence of specific or tuberculous trouble if the Wassermann and Moro-Von Pirquet tests are reliable.

History.—In November, 1907, while at work he was attacked by a stinging pain in the neck and throat, and consulted a doctor who sent him to a hospital where a tracheotomy was done to relieve what was diagnosed as abscess of throat. The tube was worn for four or five days; in a month he left the hospital, and came East. In April, 1908, he got worse and entered the Episcopal Hospital in Philadelphia, remaining until July. While there, an intubation was done; and he was discharged with a certificate stating that he had necrosis of both arytenoids and paralysis of both recurrent nerves. I found no paralysis except of the abductors, and no necrosis of the arytenoids.

On September 5, 1908, while I was away, he had a dangerous attack of dyspnea necessitating a re-opening of the trachea, which was done by my assistant, Dr. Baggarly. He improved for some time, but as the pus from the larynx continued, and a decided esophageal stricture developed, I opened the larynx on November 25th, curetted the necrosed cartilage found and laid open an abscess in the laryn-

geal wall, extending up from the cricoid to the left vocal cord, and cauterized it with carbolic acid.

I also removed part of the cord to enlarge the glottic aperture and would have done well to remove both cords. In the healing after the laryngo fissure, the left arytenoid slightly overlapped the right and both were more or less swollen. In June, 1909, as very little change had taken place I did another laryngo fissure, removing the cartilage without overlapping. In this, I was only partially successful.

In July he went home, and came back in October, 1909. As the stenosis still continued, I thought a laryngostomy with the subsequent tube pressure would bring about the desired result. Before doing this, I suggested that he visit Pittsburg and consult Dr. Jackson. This he did, and remained several weeks under his observation. Dr. Jackson's conclusions are best given by quoting his letter to me. "I have been unable to determine positively the cause of the chondrial abscess in Healy's case. As you stated, he has neither syphilis nor tuberculosis. The Moro-Von Pirquet, hemolytic and Wassermann tests are all negative. I think it must have been a deep penetration of infection of the mucosa. I have seen a number of laryngeal abscesses when no other cause could be found. The question that bothered me most was whether the lumen of the cartilaginous box remaining would permit a good result from laryngostomy. I have decided that it would, but it is going to be a very tedious after-treatment. As he need not stay in the hospital more than a few days, I am asking if you cannot arrange to operate upon him in Richmond. I will send him home after a few more days of study. You can do the operation as well as I can. I appreciate very much your allowing me to see him."

He came back to me early in 1910, but I had to wait nearly two months to get a Jackson tube. In April, 1910, I did an incomplete laryngostomy, incomplete inasmuch as the posterior wall of the cartilaginous framework could not be split in the usual way because of a complication that prevented—an unhealed abscess of the posterior laryngeal wall starting from the cricoid and extending upwards about three-fourths of an inch with the apex opening into the esophagus.

If I had split the mucosa and cartilage down to the esophageal wall, I would have made a

*Exhibited before the Richmond Academy of Medicine and Surgery, March 28, 1911.

large opening into the tube and still further complicated matters. I, therefore, contented myself with slitting up the laryngeal wall of the abscess, inserting the laryngostomy tube and packing well around it to get as much opening as possible for removing and replacing the tube. The result speaks for itself. The abscess is healed, the fistulous opening into the esophagus has closed, the lumen of the larynx has increased, and although there is still some swelling of the arytenoids, I think we may safely close the external opening. In order to be sure of this, I had made the ingenious contrivance of closing the opening which he now wears, and you can see how it works. It acts something like the apparatus for closing the valve aperture in an automobile tire.

The unusual features are necrosis of the cricoid, which is rare, and when present is usually due to syphilis; he has had both vocal cords removed, and still has a fair voice; he had a stricture of the esophagus, now gone; and the rare complication of a fistula between the esophagus and larynx.

I agree with Dr. Jackson that the trouble was originally due to a traumatism of the mucosa, not the mucosa of the larynx, as he suggested, but of the esophagus at the cricoid cartilage (possibly caused by the impaction of a small fishbone) which resulted in ulceration, swelling, obstruction and eventually necrosis, with paralysis of the abductors, abscess and perforation.

Analyses, Selections, Etc.

The Treatment of Gastric Ulcer.

There was a time not long since when gastric ulcer was considered to be a disease to be treated by the general practitioner or medical specialist and not by the surgeon; but the last two decades have shown that gastric ulcer is in a considerable proportion of cases distinctly one to be treated by surgical measures. At the present time there is a tendency on the part of surgeons and physicians to consider lightly the value of medicinal measures in this malady and to resort to surgical interference more frequently than is necessary. Nevertheless, it is clearly understood by those who have followed the matter most closely that all cases of gastric ulcer are certainly not surgical, nor are all cases of gastric ulcer to be treated by

medicinal means. In other words, we are learning to separate these cases into two groups. In some instances prompt surgical interference is without doubt the only thing to be done. In other instances, surgical interference is unnecessary, and in others, actually dangerous; and there are still other cases in which it is a nice question as to whether medicinal or surgical measures will give the best results.

A very interesting paper upon this subject has recently been written by Dr. George R. Lockwood, of New York. As he well points out, three distinct types of gastric ulcer present themselves to the physician. In the first class are acute ulcers, which he estimates as constituting 15 to 20 per cent. of the total number. As he well says, these are almost certainly amenable to medical treatment, and the excellent results obtained by these means in this type of cases are perhaps responsible for the belief of many physicians that gastric ulcer is usually a medical disease. Indeed, Lockwood believes that 90 per cent. of these cases are cured by proper non-surgical treatment. Because they do not come under the view of the surgeon, whereas other severe types do come under his observation, the surgeon draws the conclusion that gastric ulcer is practically always to be treated by the knife.

The second class of cases are those of common ulcer, which have recurring hemorrhages, adhesions and deformities of the stomach produced by cicatrices. In many of these cases there can be no doubt that surgical interference is the only means by which the patient can get comfort; and where there are recurring hemorrhages and the patient is *not* so anemic as to be unsuitable for operation, we believe that a gastro-enterostomy, which will permit the ulcer to heal, is perhaps the only method by which the patient's life may be saved. It is fatal to wait until another hemorrhage occurs, since the anemia and shock at this time may prohibit operation or greatly increase the danger.

So, too, where an X-ray examination shows that adhesions or cicatrices have so impaired gastric motility that normal function is impossible, operative interference is of value. The more radical the operation, the greater the danger to the patient. In this connection it is well to emphasize another point brought forward by Lockwood, namely, that the advice

of the physician as to surgical interference should depend to a great extent upon the skill of the surgeon who will be called in to operate. Sufficient statistics are at hand to indicate that the mortality in uncomplicated cases, when the operation is performed by a surgeon of experience in gastric work, is, perhaps, not greater than 2 or 3 per cent.; whereas, when performed by a surgeon who has not much experience along these lines, it is as high as 8 or 10 per cent.

Statistics in regard to the value of medicinal and operative treatment of gastric ulcer have to be analyzed very carefully, in order that we may not be led astray. It is important that hospital cases can be separated from cases in private practice because hospital cases are usually far advanced and suffering from severe lesions when they present themselves for treatment; whereas, as a rule, patients in private practice apply for medical advice when the symptoms are mild and the disease in its early stage. If we do as Lockwood has done, separate hospital from private patients, we find that the mortality in hospitals from gastric ulcer is a little over 12 per cent., whereas in private practice it is only about 3 per cent. Concerning the mortality as a result of operative interference, we learn from Lockwood's paper that the mortality is 11.4 per cent. in private practice as against 20 per cent. in hospitals. These statistics are the original ones of Musser. Dunham states that of 48 patients with gastric ulcer who were operated upon, 12 died within seventeen days and 6 of these within three days, making an immediate mortality of 12.5 per cent.

When we consider the ultimate results of medical and surgical treatment of gastric ulcer there is still much room for an increase in our knowledge, because statistics as to ultimate cure are badly distorted in that different clinicians consider cases as cured after widely varying intervals of time, some reporting their cases cured when the patient is free from suffering three weeks after treatment was stopped and others calling their cases cured only when a period of three years has elapsed. Both of these types represent extremes which are excessive. It is to be recalled that even if a case which is treated medicinally relapses, the patient may have no more distress than will come to her if she is subjected to an operation, as the suffering of the operation plus the pains

and discomfort which often persist about the site where the surgeon has done his work, must be taken into account. In other words, there can be no doubt that grave symptoms of ulcer whereby the patient's life is made miserable, or whereby it is endangered, should be treated surgically, but a very large number of cases, certainly the majority of all cases of gastric ulcer which are not complicated, should be treated medicinally before surgical measures are resorted to.—(*Editorial, Therapeutic Gazette*, July, 1911.)

Duodenal Ulcer.

Lewis Brinton, Philadelphia, says that duodenal ulcer is much more common than medical men suppose it to be. Practitioners diagnose cases of intractable stomach diseases as indigestion, dyspepsia, catarrh, when many of them are in reality well-defined cases of duodenal ulcer. The usual history is long illness, extending over a period of ten to fifteen years; repeated visits to various physicians and a final desperate attempt to seek relief in a hospital. The average duration of these attacks before proper diagnosis and treatment is about twelve years. Statistical figures as to its actual frequency are of questionable value. On the one hand, clinical figures are misleading because of our certain knowledge of some acute ulcers which heal spontaneously and are undiagnosed, and because many cases of duodenal ulcer reach the autopsy table without having been diagnosed clinically. On the other hand, pathological figures are also misleading for several reasons.

Perforation is relatively more frequent in duodenal than in gastric ulcer, though a greater proportion are chronic and become walled off by protective fibrous tissue.

About 80 per cent. of all cases is seen in males, and usually between the ages of 20 and 35 years. The patient may develop an attack of acute indigestion with severe pain, lasting two or three days or as many weeks. This disappears for a period of several days or weeks, to recur, the attacks increasing in severity and frequently month after month for several years. During the attacks the patient may suffer some loss of weight but not a great deal, and this is usually gained in the remission. This frequent, sudden, cyclic recurrence and disappearance of the symptoms without apparent exciting cause is peculiarly common

to duodenal ulcer. Graham goes so far as to assert that this one feature is often sufficient to cause us to suspect duodenal ulcer, but he is forced to admit that it may also occur in cholelithiasis and some cases of appendicitis.

There are several remarkable features of the pain which suffice to differentiate it from other pains. First, it is not usually reflected. A pain reflected to the back is more indicative of gastric ulcer. Second, its characteristic occurrence, two to three hours after a meal. Occasionally, this may be said of gastric ulcers when they are situated in or near the pylorus. In general, it may be said that the longer the time between the completion of the meal and the occurrence of the pain, the greater the distance from the cardia to the ulcer. Pain one and one-half to two hours after meals rather indicates an ulcer in the pylorus. Pain delayed two to four hours after meals is more likely to be duodenal in origin. Third, the quick and complete relief secured by taking something into the stomach, no matter how small. The relief thus obtained may be attributed to the sudden closure of the pylorus, thus preventing passage of the acid gastric juice into the duodenum.

Subsidence of pain may also be obtained by the administration of alkalies, olive oil, by gastric lavage and, partially so, by vomiting or eructations of gas. Fourth, the frequency with which the pain occurs at night and its severity. It is quite commonly found that pain develops at 10 P. M., preventing sleep; or if the patient fall asleep, he is frequently awakened by the pain between 1 and 3 A. M. One such nocturnal attack might be caused by a variety of diseases, but the constant recurrence, night after night, is almost pathognomonic. Pain in duodenal ulcer is so characteristic that it is surprising more cases are not diagnosed in the incipency; but when is added long years of suffering and cyclic recurrence, diagnosis should not be difficult.

There is frequently a small quantity of blood in the feces, the latter responding to the occult-blood test. Often, there are frank hemorrhages giving tarry stools. Rather infrequently, there is hematemesis either immediately before or after an attack of melena.

Vomiting occurs in about one-fourth of the cases; it is neither constant nor severe. Constipation is the rule. The general physical condition is remarkably good in all cases un-

less there has been recent severe hemorrhage or perforation.

Tenderness over the abdomen is usually pretty constant in its position in the right hypochondrium midway between the top of the tenth costal cartilage and the epigastrium. It is not so severe in character as the exquisite tenderness accompanying gastric ulcers. Occasionally there are signs of gastrectasis associated with the ulcer.

Gastric analysis offers but small aid in analysis. Sometimes, there is quite a pronounced hyperchlorhydria, but it is the writer's experience that quite frequently a hypochlorhydria is found, which may or may not be a late occurrence, resulting from the previous long-continued hyperchlorhydria. There is, nearly always, a greater or lesser degree of delayed motility which may result quite as readily from hypo- as from hyperchlorhydria. Some times, even a reverse peristalsis is developed when reflex pyloric spasm is produced. The author regards Cammidge reaction as a factor in diagnosis.

Because of the delay in diagnosis in most cases, treatment should be surgical; but the author is convinced that in the early stages of the disease, it should be medical, and whatever the selection of drugs used, the most important consideration is the diet.—(*Amer. Journ. of Gastroenterology*, June, 1911.)

Editorial.

Care of the Breast During the Puerperium.

To those conversant with the discomfort and pain to which the patients are subjected by the ordinary treatment for caked breasts, and in order to dry up the breasts, the method, as instituted by Dr. Williams of the John Hopkins is truly a great advance. The ordinary treatment for caked breasts consists of stupes, or ice bag; frequent massage, cutting out liquids, tight binders, and Epsom salts in sufficient quantity to cause the bowels to move frequently. To check the secretion, a tight binder is left on constantly, active purgation, and liquids cut out.

It would often consume the entire time of several nurses, in order to attend to the massage of the breasts, and the removal of the bed pans for one patient, and in addition,

there were the dangers of irritation to the breasts by such frequent manipulations, and the patient becoming infected by the constant use of the bed-pan.

The method, as instituted by Dr. Williams, was carried out on 100 of the Lying-In Hospital of New York City. No breast binders were placed on patients with small or medium-sized breasts, and a loose supporting binder was given to those with large or flabby breasts. When the breast became painful, codeine was given in 1-2 grain doses, every four hours, if necessary; no particular attention was paid either to the bowels or the diet, save that one bowel movement was required daily.

They found that caked breasts, if they developed at all, lasted from one to three days, and that not more than three or four doses of codeine were required during this time. In the patients who were not nursing, the caked condition rarely lasted over three or four days, and by the tenth day the breasts were either dry or contained only a slight amount of milk.

Number of patients who nursed their babies	88
Without caked breasts	67
With caked breasts	21

There were five cases of threatened abscess with symptoms—painful, tender masses in breast and a rise of temperature from 101° to 103° F. The symptoms lasted one day in 2 cases, two days in 2 cases, and three days in 1 case. No abscess developed in any. It seems safer, however, to use some support in all cases, as in no other way can the nipples be protected thoroughly by means of boric acid powder and sterile gauze. In primiparae, cutting down liquids on second, third, and fourth days, prevents overdistension of the breasts. The nipple shield should be used at the first evidence of erosion of the nipple, and equal parts of balsam of Peru and castor oil applied on sterile gauze.

Repeal of State Special License Tax on Doctors.

In view of the fact that members of the State Legislature are to be elected this year, it occurs to the writer that now is a good time for the physicians in the State to put a few questions up to the various candidates

aspiring to represent us in the State Legislature.

That incubus—the Physicians' State License Tax law—must be repealed at next meeting of our State Legislature, if possible; and now is the opportune time to go to work among the various candidates for the House of Representatives, and round them up for a solid front, and have that antiquated law wiped off the Statute Books. It is out of place and out of date—as much or more so than toll-roads. Suppose a man is held up nowadays on the public highway, and made to pay the old time toll-gate fare? Why, it is just as absurd and unjust to demand that ten dollars State-toll before the physician may proceed on his professional rounds the first day of every May.

Now, if the physicians do not see to the removal of this discriminating unjust special tax levied upon them, who is going to attend to it? Every Medical Society in the State should bring the matter up, and the physicians act both collectively and individually to have that blot wiped from the Statute Books of Virginia, which stands alone (save one State, I believe) in levying a special State tax upon the guardians of the public health. The physicians are not around boasting of the charity and unremunerative service done for the State, but—modestly mentioned, if we must—the medical profession does more charity work for the State than all the other professions combined. The physician occupies a peculiar position, one so unique, in fact, that he is constantly trying to work himself out of a job. Think what the profession is doing in matters of public health and preventive medicine! We are not asking favors or special privileges; on the other hand, we are glad of the opportunity to serve the State, but object to spoiling the proper sense of justice and eternal fitness of things, in having to pay for the privilege of serving the State. Shall the servant pay the master? Indeed, it is the principle of the thing as much or more than the amount involved. Therefore, the Physicians' State License Tax law should be repealed, and will be, when the physicians of the State get together and work to that end.

SAMUEL W. HAMMOND, M. D.

The foregoing comments should furnish

food for thought with all Virginia doctors interested in the repeal of the iniquitous *special* license tax. Because of the importance of the subject to the average practitioner in this State, they are introduced for the sake of emphasis in the editorial columns of this issue—the last before the primary elections of September 7th. All that is asked is justice—nothing more—and the influence of the neighborhood doctor, if once thoroughly aroused for or against a candidate, is not to be despised.

Few legislators have greatness thrust upon them; their positions are usually of their own seeking. Some desire to be members of the General Assembly, deeming it an honor, and because it gives a certain prominence in their respective localities, while some may regard such position as a stepping-stone to better things. But, whatever the incentive, the first duty of a legislator should be to represent the legitimate interest of, and, as far as in him lies, protect his constituency from unjust and discriminating laws.

An overwhelming majority of Virginia doctors, intelligent and influential suffragists, feel that the *special* license tax charged them for the privilege of practicing medicine is unfair and indefensible, and that the law should be repealed, even though the benefits be not considered that constantly accrue to the State from services rendered it gratuitously, especially in matters relating to public health.

The question is not one of expediency, but of right. If candidates are not willing to represent us in questions that affect us wrongfully, they have no right to expect our support. While possibly in a few individual cases other important considerations may influence votes here and there for aspirants who conscientiously differ from us on this one question, as a general proposition the candidate who pledges to represent the doctor in his demand for repeal of this evil and discriminating *special* license tax should receive our most hearty support.

Catawba Relief Association.

Patients at Catawba Sanatorium, who, according to the new ruling limiting the stay of a patient at the Sanatorium to six months, have been forced to vacate in order to allow others the same privileges they have

been enjoying, have banded themselves into the above named Association, with the strongest of their number as officers, and are appealing for money to erect a couple of new buildings. If successful, these buildings will serve as homes for patients leaving the Sanatorium in the future as well as at the present time, until their condition is such as not to spread infection or cause alarm upon return to their homes.

This movement meets with the hearty endorsement of the Virginia Health Department, though it is powerless to assist, owing to the lack of funds to accomplish more than it has already undertaken. It is believed that \$7,000 will furnish accommodations to enable at least thirty patients to remain where they can continue their treatment and be permanently cured. This appeal is made not to the medical profession alone, but to the public also, as the good accruing will be far-reaching in the assistance given the State Anti-Tuberculosis Association in reducing the possible sources of infection.

Donations should be addressed to the treasurer of the Association, Mr. A. W. Barrow, Catawba Sanatorium, Va.

The Virginia Anti-Tuberculosis Association is still trying to secure homes for patients as they leave the Sanatorium, but results to this time are far from gratifying.

A Conference of Hookworm Experts

Will be held in Nashville, Tenn., September 14, under the Rockefeller Sanitary Commission. Dr. Allen W. Freeman will attend as a representative of the Virginia Health Department.

In connection with this Conference, it may be interesting to note that beginning August 14th, the Virginia Health Department opened six dispensaries in Lunenburg County, for the free instruction and treatment of hookworm disease. A different dispensary is visited each day, the physician in charge to return at the end of a week to furnish additional information and treatment when desired. At the end of three weeks it is believed the situation will be so well in hand that new territory can be taken up. This work done by the State Health Department, supported by the Rockefeller Sanitary Commission, in no way conflicts with the work of the general practitioner, but is to be done throughout the State

with the co-operation of the medical profession.

Drs. Plecker and Tarter have direct charge of the work in Lunenburg county.

The American Roentgen-Ray Society

Will hold its next annual meeting in Richmond, Va., September 20-23, 1911, under the presidency of Dr. Percy Brown, Boston, Mass. Other officers are Drs. Edward H. Skinner, Kansas City, Mo.; W. C. Hill, Cleveland, O., and W. F. Manges, Philadelphia, Pa., vice-presidents; Dr. Fred H. Baetjer, Baltimore, Md., secretary; and Dr. Chas. F. Bowen, Columbus, O., treasurer. Meetings will be held at the Jefferson Hotel. The local committee are working to make the Richmond meeting pleasant socially as well as scientifically.

The Montgomery County (Va.) Medical Society

Met at Blacksburg, August 2, a number of visitors being in attendance. In the absence of the president, Dr. H. D. Ribble, Dr. P. B. Barringer acted as temporary chairman. Dr. R. H. Cowan was elected first vice-president to fill a vacancy. The secretary, Dr. A. M. Showalter, was at his desk.

Dr. Barringer leading the discussion on Hookworm, showed a number of slides, demonstrating the ova and worm, together with the ova of *Ascaris-L* and the Pin-worm. The microscopical appearance and clinical symptoms of Hookworm disease were fully discussed, as also were several other interesting subjects.

The next meeting will be held September 15, 1911, at Christiansburg, at which time Dr. A. S. Ellett will present a paper on Pellagra, and exhibit a patient in the active stage of the disease.

The Augusta County Medical Association,

At its annual meeting, August 2, elected the following officers for the ensuing year: President, Dr. H. F. White, Fishersville; Vice-Presidents, Drs. W. S. Whitmore, Staunton; H. H. Welland, Greenville, and Kenneth Bradford, Staunton; Secretary, Dr. A. J. Burkholder, Staunton; Treasurer, Dr. W. F.

Hartman, Swoope; Censor, Dr. M. P. Jones, Churchville, and trustee, Dr. R. S. Griffith, Basic City. The next meeting will be held November 1, 1911.

The Southside Virginia Medical Association

Will hold its next quarterly meeting at Emporia, Va., September 12. Drs. J. Bolling Jones, Petersburg, and E. F. Reese, Courtland, are president and secretary, respectively. The usual pleasant time is promised.

American Proctologic Society.

Officers for the fourteenth annual session of the *American Proctologic Society*, to be held at Atlantic City, in 1912, are as follows: President, Dr. John L. Jelks, Memphis, Tenn.; Vice-President, Dr. Alfred J. Zobel, San Francisco, Cal.; Secretary-Treasurer, Dr. Lewis H. Adler, Jr., Philadelphia, Pa. (re-elected); and Executive Council, Drs. Geo. J. Cook, Indianapolis, Ind.; John L. Jelks, Memphis, Tenn.; Dwight H. Murray, Syracuse, N. Y., and Lewis H. Adler, Jr., Philadelphia, Pa. Exact date and headquarters are to be announced later.

The following were elected Associate Fellows of the Society: Drs. Arthur F. Holding, Albany, N. Y.; Ralph W. Jackson, Fall River, Mass., and E. H. Terrell, Richmond, Va.

Dr. Robert F. Williams,

A former Virginian, who has recently made his home in El Paso, Tex., has been elected dean of the University of Oklahoma Medical School, in Oklahoma City, and will enter upon his duties at the beginning of the coming session.

The North Carolina Association of Trained Nurses

Is the recipient of a donation from Dr. I. J. Archer, of the Cragmont Sanatorium, Black Mountain, N. C., of a site in the midst of his beautiful estate for an Invalid Nurses' Home. The donor also offers medical services gratuitously. The Association expects to commence the erection of its buildings in the Spring.

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Original Communications.

VISCEROPTOSIS.*

By J. NORMENT BAKER, B. A., M. D., Montgomery, Ala.

Secretary of the Medical Association of the State of Alabama; Surgeon to St. Margaret's Hospital, etc.

More than twenty-five years ago, Glenard, the father of visceroptosis, spoke these words:

"I can affirm," he says, "that the physician who will follow my directions and strive to verify my statements in such cases (meaning visceroptosis) will find in his practice the satisfaction which a *positive diagnosis* gives to both physician and patient, from which alone a proper *prognosis* can be made; and that satisfaction, the greatest of all, which directs the treatment and avoids for the patient the trial upon him of so many remedies, while at the same time it secures him relief and prevents the physician himself from falling into therapeutic scepticism."

These words are little short of prophetic, and are just as true, or more true, to-day, than they were when uttered by Glenard, for the reason that the gauntlet now run by the poor patient is more thickly studded with pseudo-surgeons who stand ever ready to "anchor" everything "loose," even to the patient's morals.

The term first used by Glenard was *enteroptosis*, or a displacement of the intestine; his conception being that the "*fons et origo*" of the whole disorder was a sagging of the hepatic flexure of the colon. Starting with this theory as his foundation stone, he proceeded to weave, with enviable enthusiasm, a most elaborate superstructure, bringing into it that medley of symptoms and that peculiar physical form which to-day we recognize as characterizing the enteroptotic.

The term, *visceroptosis*, is a more inclusive one and embraces within its compass a looseness or sagging of any viscus, either abdominal or pelvic; if, however, one cares to be more specific, this can be done by adding, to the organ affected, the word *ptosis*, as *gastroptosis*, *nephroptosis*, *coloptosis*, and the like.

Etiology.—The study of visceral ptosis from an etiologic standpoint has provoked a variety of theories differing so widely that it is manifestly impossible to find one theory broad enough to explain all cases. Stiller holds that it is a congenital anomaly; unquestionably, the factor of heredity plays a most potent part and is not to be lightly dealt with. Noble, of Philadelphia, in his sweeping hypothesis of "hereditary hypoplasia" gives to the careful student much food for thought. According to his theory, this hereditary hypoplasia prominently manifests itself at or about the age of puberty—a time when the normal girl discards the characteristics of the neuter or child and assumes the form and figure of the essentially feminine. In those cases stigmatized by this inherent tendency to a lack of development we find the age of puberty much delayed; the thyroid and mammary glands fail to develop; the hips fail to broaden. Not alone are these gross external features absent, but the uterus, with its ligaments and supports, the ovaries, the tubes and their ligaments, all, still bear the ear marks of the child; the cervix is long and presents the "pin hole os" of Marion Sims. In short, we see in this type of creature an absolute inability to respond, by a normal physiologic hypertrophy, to the first serious demand made upon it by nature. This developmental failure is not limited to the reproductive organs alone; it permeates every organ and every tissue of the whole being, because it is inherent and is an integral part of the fertilized ovum from which the creature had its beginning. That is to say, there is a gen-

*Read before the Medical Association of the State of Alabama, at Montgomery, Ala., April 19, 1911.

eral hypoplasia of the entire body—muscular, nervous, visceral.

Stiller has found that in from 80 to 90 per cent. of all cases, a typical constitution of the patient could be found; being the anatomic substratum for the clinical symptom-complex designated by him as "Congenital Universal Asthenia;" that is to say, a congenital constitutional weakness. We are able now to recognize this constitutional asthenia by the peculiar structure of the thorax and abdomen.

The so-called "habitus enteropticus" is a true anatomic basis for the whole symptom complex. Given this type of woman, thus seriously handicapped by nature, and heap upon her the burdens of a strenuous and laborious life, the wear and tear of frequent child-bearing, with its consequent relaxation of the abdominal musculature, and it is not difficult to picture the result as being a creature with a ptosis of every viscus within her abdomen and pelvis.

Further, a careful analytical study of the history, both personal and family (meaning by this that we delve deeply and painstakingly into the forebears of the patient) of a victim of enteroptosis, will often divulge facts of the first importance; it will be ascertained that such a sufferer is a member of a family in a period of involution and that she is the luckless survivor, or at least one of the few luckless survivors of a family about to become extinct, and that there are present in her physical form unmistakable evidences of degeneracy and physical decline.

Keith takes the view,—which, when carefully analyzed, has much to commend it,—that enteroptosis results largely from a vitiated method of respiration; meaning that faulty movements of the diaphragm, resulting from various causes, as will be explained a little later, determine visceral ptosis.

Quite recently, Longyear, of Detroit, has presented a very attractive theory which seeks to explain these ptoses by a pull which is exerted primarily on the kidney, through the nephrocolic ligament, by the sagging of the large bowel. With this descent of the large bowel and kidney comes also an involvement of the duodenum, and subsequently the stomach. He also contends that the prolapse of the kidney is always secondary to a drop in the colon, for the reason that many cases show,

with the radiograph, ptosis of the large bowel without kidney involvement, while in no case, could a renal ptosis be demonstrated which had not also a coloptosis.

In order to gain a clearer conception of the general subject of visceroptosis, one must recall to mind the various factors which are instrumental in retaining the various abdominal organs in position. There exists within the abdominal cavity a *definite hydrostatic pressure* which exerts a greater or less force in the maintenance of these various organs in their proper location; should the dimension of this cavity be in any way altered, this intra-abdominal pressure likewise undergoes an alteration and the organs are likely to yield to this decrease in pressure and sagging will be the consequence.

The effect of *posture* is probably of even greater importance than that of hydrostatic pressure. The upright position, that is, the one in which the body is made as tall as possible without rising on the toes, is the attitude in which there is least strain and is, therefore, the correct attitude. In such position the muscles of the trunk are in such balance that while the anterior and posterior groups are in slight contraction, none are strained and but few of the ligaments are under tension. This holds true alike for all three of the important cavities of the trunk—thoracic, abdominal and pelvic. The heart and lungs are less incommoded: the anterior abdominal muscles are put on a stretch, thereby securing a tone which exerts an even pressure on the abdominal and pelvic contents and thus tends to keep each viscus within its proper sphere.

If, therefore, the erect poise be the proper one from the view point of economic functional efficiency, any marked deviation therefrom must, of necessity, produce disturbances in visceral support. If the body be habitually inclined forward, the chest is flattened above and the normal, free action of heart and lungs may be materially embarrassed. Thus it is that we most often find that in a patient who has the "habitus enteropticus" well established, there is a pronounced drooping of the shoulders, with a chest undersized, collapsed and flattened. The intercostal spaces above are widely separated, while the lower ribs are crowded closely together and slant markedly

downward and inward, producing a very deep epigastric angle which is quite characteristic.

The capacity of the upper or thoracic abdomen bears an indirect ratio to the depth of this epigastric angle; that is to say, the deeper or more acute this angle becomes, the less capacious will be this region. Indeed, the size and form of the thorax and upper abdomen as seen and estimated externally, serve as a fair index to the position of the abdominal viscera.

Further, it is but an easy corollary to trace how this sagging and giving way of the bony framework of the thorax will materially interfere with the proper functioning of that very important structure, the diaphragm. The drooping forward of the chest necessarily shortens the vertical diameter of the abdomen, with, as a consequence, an increase in the antero-posterior diameter and a stretching of the diaphragm, also anteroposteriorly, which produces a lowering of the dome or arch of this cavity. This is the mechanical explanation of Keith's theory of enteroptosis as being a vitiated method of respiration.

Again, let us trace the inevitable consequence which must, *per force*, befall those abdominal viscera swung from, and immediately adjacent to, such a diaphragm—notably the liver, stomach, transverse colon, duodenum and kidneys—more especially the right.

The concave lower surface of the diaphragm fits the upper convex aspect of the liver like the cover of a baseball, and just so much as the former is displaced, by just so much will the latter be displaced. Hence, the frequent prominent anterior border of the liver in these subjects. It is easy to see also how such a displacement might, by the production of "kinks" in various portions of the bile passages, lead to bile stasis, infection and consequent cholelithiasis; thus adding a real pathological lesion as ground for explanation of much of the dyspeptic distress so often encountered.

The stomach owes its stability of position largely to the attachment of the esophagus to the diaphragm, plus its own mesentery; consequently a downward droop of the diaphragm produces the same effect upon the stomach. With this downward movement the chief sag takes place first in the lower or pyloric half of the stomach, this being the most dependent portion. Since, however, the possible down-

ward movement of the pyloric end is limited by the firm attachment of the second and third portions of the duodenum—these, it being recalled, are retroperitoneal and have but very limited motion—the amount of sag at the pylorus is not great, but the rest of the organ can sag downward to almost any degree. To permit this, the upper portion of the stomach, which is naturally the largest, becomes elongated and stretched, while the large or prominent part of the organ develops in the middle, or much lower down than is normal. As the stomach elongates, taking with it the first or movable portion of the duodenum, we thus see that more or less angulation or kinking occurs in the duodenum, which materially embarrasses proper gastric drainage. These factors, varying with the degree of elasticity of the individual observer's imagination, can explain as many or as few of the digestive ailments as he may see fit.

The whole of the small intestine, too, is forced downward by the displacement from above and the circulation and innervation of this segment of the digestive tract is impaired, as well as the absorptive capacity being seriously crippled.

With the large bowel, somewhat similar conditions exist, but it must be remembered that, usually, the ascending colon has no mesentery from just above the cecum to the hepatic angle, where the transverse colon begins; this latter has a complete mesenteric covering which suspends it from the lower border of the stomach; at the splenic flexure it again loses its mesentery, becoming retroperitoneal as the descending colon. Thus it is seen that the large bowel is more or less fixed at the two points of angulation, that is, at the hepatic and splenic flexure: and that the transverse portion, attached to the stomach, will sag and droop just in proportion as the stomach does.

Here again we have the free movement of the fecal current materially hampered and a ready explanation offered for the intractable constipation which usually marks these sufferers. It is by no means an unusual picture to find in these cases a transverse colon well down in the pelvis.

Numerous workers, experimenting with the X-ray in these cases by means of the bismuth paste meal, have been able to demonstrate not only the *transverse* colon, but practically the

whole of the large bowel, occupying the pelvis with, as may well be supposed, much kinking, crumpling and angulation of this bowel.

With this colonic and visceral descent (even though the nephrocolic ligament as described by Longyear, be not such an important etiologic factor as he would have us believe) together with a general disturbance of the intra-abdominal pressure, it requires no great stretch of the imagination to trace how the kidneys, too, might clamor for, and gain recognition in, this general descensus. The right kidney suffers most often, for the reason that the tug and pull is exerted almost entirely on viscera with which it is most intimately associated.

Symptomatology.—Visceroptosis does not invariably give rise to symptoms, and we should clearly recognize the fact that enteroptosis and good health, as ordinarily considered, are not necessarily incompatible. We not infrequently see about us women of a very marked type who are apparently enjoying excellent health; they feel well, are free of pain, and are able to take their places in the social world.

Yet, while this may be true, it should likewise be remembered that the physical equilibrium and mental poise of these patients is ever an uncertain equation; overwork, frequent childbearing, sudden, severe shocks, unhappy domestic environments—any or all of these—may serve to destroy the balance and to precipitate a frightfully complex medley of symptoms.

These symptoms are, as a rule, fairly well defined, though, they may be as protean and as complicated as the manifestation of syphilis. Most often, those referable to the digestive and reproductive organs are most prominent, together with a train, of greater or less length, largely psychoneurotic in character: such as vague and indefinite pain in the back, loins and groin; heavy distressful feelings in the upper abdomen, and dragging, pulling sensations in the pelvis; constipation and flatulence also are rarely absent and are usually marked. Throbbing in the abdomen and aortic pulsation are often to be found.

The physical form, as a whole, gives very decided impression of weakness and frailness and the facial expression oftentimes bespeaks a "neurasthenia basis": she, (for these patients are nearly all females) is slender and angular,

with no compactness of form and with marked paucity of adipose tissue. The whole muscular system is poorly developed—flabby, flaccid and lax. These, as Smith very properly terms them, are fundamental characteristics. Associated with these one usually finds, also, the long, stringy neck with, as pointed out by Keith and Williams, a forward curvature of the cervical region of the spine—"ewe-neck"; there is a forward incline or drooping of the shoulders, with a chest undersized, collapsed and flattened. The upper abdomen is narrow, contracted and somewhat scaphoid with the characteristic deep epigastric angle; the lower abdomen is often prominent, pouchy and relaxed, especially in multiparous women. Within this cavity, various degrees of visceral displacement may be readily outlined, the organs most often suffering being the stomach, colon and right kidney.

In the study of these cases, one quickly comes to ask this very important question: What is the real relation between these demonstrable visceral displacements, and the symptomatology presented? Truly, the thought lies near that a mechanical correction of these defects should at once relieve the situation.

Possibly so, if the relation of *cause* and *effect* could be clearly and uncompromisingly established. But is it not true that these poor sufferers often drift from one surgeon to another, each one finding some particular organ, which if, in his opinion, is "tacked up," or removed, will bring to her that much sought for something, good health—a something which, by nature, she has never enjoyed, nor ever will enjoy? No surgeon can afford to draw hasty conclusions, based on a superficial and perfunctory examination, when a patient belonging to this class presents herself. A most careful and painstaking history—both personal and family—must be had, together with an exhaustive study of her physical frame; no less important than these, also, is to obtain a correct estimate of her mental poise, whether or not she is introspective, moody, melancholic.

After this has been done, the next question to be answered is: To what extent is this retroverted uterus or this prolapsed kidney *actually* responsible for the symptomatic findings in this case? Is this woman, in truth, suffering from a *sore womb* or a *sore brain*? Not a few observers have tried to divide vis-

ceroptosis into two distinct classes—"congenital" and "acquired" and apportion the treatment accordingly. That is to say, for the former, or congenital type, the treatment should be medicinal and non-operative; while for the latter, or acquired type, the treatment should be operative.

Yet, anyone who has given this subject much thought or study will soon conclude that such sharp lines of division are impractical and unsatisfactory, because of the apparent very frequent blending of both factors in the same individual.

If, after a careful weighing of all evidence which can be had, a logical conclusion can be reached that the displaced organ or organs are producing the symptoms, then the patient is entitled to and should have such operation as will restore them to their former natural position. Quite naturally, if the case is plainly one of the acquired type—that is due to the stress and strain of a laborious life and frequent child-bearing—then the results to be had from surgical interference will be most gratifying. In any case, these patients are, as a rule, of a nervous temperament, and should be safe-guarded against every possible shock, both physical and mental. Of especial importance is it to see that the period of convalescence after an operation is properly conducted, and that they are not permitted to too soon take up the regular routine of their daily life.

THE ROLE OF THE TONSILS IN SYSTEMIC DISEASE.*

By HORACE T. AYNESWORTH, M. D., Waco, Texas.

The first appearance of the tonsils is at the fourth or fifth month of intrauterine life. The size at birth is 1-10 to 1-15 the size at maximal development, namely, between the sixth and eighth years. At first they are completely covered by the tonsillar membrane, which later atrophies and should disappear by the second year, but which often persists in two places, namely, above as the plica supratonsillaris, and below and in front as the plica triangularis. In these situations these folds or membranes often cover a variable number of crypt mouths, and prevent the outflow of se-

cretions, thus leading to retention, irritation and inflammation in many cases.

The tonsils, after the sixth or eighth year, under normal conditions, gradually atrophy, till at the twelfth or fourteenth year they have disappeared or are represented merely by a fibrous mass. Under abnormal conditions, and these are very often, atrophic processes are not carried out and we see various more or less pathological states of the tonsils. A tonsil that can be distinctly felt or seen without pulling the pillars out of the way or making the patient gag is pathological to a certain extent.

The tonsil lies in the tonsillar fossa, with the supratonsillar fossa above and the infratonsillar fossa below. In front is the anterior pillar, often overlapping the tonsil to a greater or less extent, and containing the palato-glossus muscle. Behind is the posterior pillar, containing the palato-pharyngeus muscle. Both pillars are very intimately related to the tonsil. Externally is the superior constrictor muscle of the pharynx, separated from the tonsil and its capsule by a layer of loose connective tissue and by the thin pharyngeal aponeurosis. The capsule, a structure 1 mm. thick, invests the tonsil externally, extending from the free border of one pillar to the free border of the other pillar.

The lymphatics draining the tonsil enter the upper deep cervical lymphatic glands opposite the angle of the jaw, and through these into the remaining deep cervical glands. It is thus seen that the glands draining the tonsil are the ones usually affected by tuberculosis in children.

The two chief types of tonsil are the enlarged, projecting one, and the buried, or submerged, one. The first type, in addition to its liability to inflammation, is especially prone to produce obstruction, with mouth breathing and all its evil consequences. The second type is even more prone to inflammation than the first type, though not so obstructive, and is generally responsible for most of the systemic disturbances associated with diseased tonsils. The submerged tonsil, often more or less innocent looking to the inexperienced eye, has proven itself clinically to be provocative of far more serious symptoms and complications than the merely enlarged tonsil.

Let us now try to see how the tonsil can be the cause of disturbances external to itself

*Read before the North Texas Medical Association, at Dallas, Texas, December 13, 1910.

and be a factor far more important than has been generally recognized in the production of systemic disturbances. Anatomically, we find that the crypts are often surrounded by conditions unfavorable to the emptying of their contents onto the surface. Superiorly the tonsil may and often does extend for 1-2 inch above the lower border of the plica supratonsillar, whilst antero-inferiorly the plica triangularis may cover the tonsil to an equal or greater extent. In these situations the cryptic contents may thus be retained to a greater or less extent, and so lead to serious inflammatory conditions. The crypts extend externally to, or nearly to, the capsule, those above having a downward as well as outward direction, so that there is a natural tendency to stagnation of their contents. If, in addition to the above, there have been several attacks of tonsillitis with the production of more or less firm, fibrous tonsils, there will be a corresponding constriction of the superficial portions of the crypts, which in turn will tend to greater retention, etc.

Pathologically, it has been found that the tonsil is not infrequently the seat of primary tuberculosis, thus in 1-5 per cent. of tonsils removed. In these cases it is not the superficial portions of the tonsil crypts, but the deeper parts that are involved, and this process may, and generally is not, evident macroscopically. Again, it is an established fact that various pathogenic germs may penetrate through the tonsils and enter the general system without producing discoverable changes in the tonsils themselves. On the other hand, in diseased conditions of the crypts the latter continually discharge their foul contents into the throat and more or less of this is swallowed, giving rise directly to gastro-intestinal disturbances, such as loss of appetite, constipation, diarrhoea, etc., and, secondarily, to disorders of the liver, heart, kidneys, etc.

In the impaired nutrition of children of tonsillar origin, the tonsils, aided almost invariably by adenoids, produce this state by a combination of several ways. First, by obstructing nasal breathing, so that the inspired air is neither warmed, moistened nor filtered, oxygenation is imperfect, and anemia a natural consequence. Foul debris from the tonsil crypts may and generally is swallowed, and thus sets up gastro-intestinal disturbance and

its secondary evil effects. Also, absorption of the products of inflammation and decomposition, as well as pathogenic germs and their toxins, from the tonsils directly into the lymphatics of the neck and so into the general circulation takes place, and further debilitates the patient. Waugh, (*Surg., Gyn. and Obstet.*, April, 1909), in giving his experience at the Great Armond Street Hospital, London, says: "There is a large group of cases made up of children who are simply profoundly debilitated, poorly nourished, exhibiting lassitude both in work and play, and who are frequently described as being victims of a 'weak constitution.' * * * Of the 118 cases, who have been chiefly under the care of Dr. Hutchison, suffering from general debility, nine showed no improvements after the operation (tonsillectomy). The remainder made a rapid and complete recovery."

In this connection, we may discuss the role of the tonsils in producing cervical adenitis. The submerged tonsil is chiefly responsible for this condition, and if a careful examination is made, enlarged cervical glands along the internal jugular and in the posterior triangle of the neck will often be found. And if the tonsils are removed before the glands soften, the latter will in a great majority of cases go down without further treatment. Beck (*Jour. A. M. A.*, Oct. 29, 1910), has had some noteworthy experience along this line, and his experience in a test case as follows is worthy of extended quotation: "Taking a case of bilateral glandular enlargement, in which the tonsils appeared to be diseased, I performed a radical operation on the glands of one side, extending from the stylo-mastoid region to the region below the clavicle in the anterior as well as the posterior triangle, superficial and deep, amounting to 46 enlarged glands. Some time after the recovery of the patient, an enucleation of the tonsil was performed on the opposite side where the glands of the neck had not been operated on. The patient was placed under the best hygienic, dietetic and climatic conditions, and after six months returned for examination. I found the patient much improved. The glands on the side where the tonsil was enucleated had disappeared, whereas on the opposite side where the glands had been radically removed, but the tonsil left in place, four glands had become newly enlarged below the

sternomastoid muscle. The conclusive evidence that the tonsil is the source of infection of these glands is given by its enucleation." Not only this case, but a number of others have responded to proper treatment of the tonsil in a similar way. Of course it must not be inferred that disease of the tonsils or of any or all of the structures of Waldeyer's ring is the sole cause of cervical adenitis, but I wish to emphasize that disease of these structures, and especially of the tonsils, is the chief source.

In pulmonary tuberculosis I believe that diseased tonsils are not infrequently responsible. They at least aggravate the condition. As has been shown the tonsils are often primarily involved. This is followed by cervical adenitis, which in turn may affect the apex of the lung through the pleura or go by way of the general circulation. Kyle (*Jour. A. M. A.*, Aug. 6, 1910), thus sums up the relation existing between the tonsils and tuberculosis: "When we find evidence of tubercle bacilli in the tonsils, and swollen cervical glands, tuberculous in character, without observable lung involvement, the evidence is quite conclusive that the tonsil is the portal of infection. It is the opinion of Jonathan Wright, who is probably the greatest authority among laryngologists in this country, 'that tuberculous cervical glands at the angle of the jaw are almost always secondary to primary tuberculosis of the tonsil.'

"From personal experience I do know that not infrequently patients have come under my observation suffering from the general symptoms of incipient tuberculosis, that is, loss of flesh, general apathy, and elevated temperature, in whom the tubercle bacilli were found in the cheesy deposits of the tonsils, and immediately after complete removal of the tonsils in their capsule, all the symptoms disappeared, with speedy restoration of the individual to health. I have also observed marked benefit to follow the removal of tonsils in cases of pulmonary tuberculosis in the early stage, in which tubercle bacilli were easily demonstrated in the sputum. Some patients apparently recovered. These patients gave a history of repeated attacks of tonsillitis or irritation in the tonsillar region.

"The direct connection of the cervical glands with the apices of the lungs makes it compara-

tively easy for the tubercle bacilli to seek the point of least resistance, which is the apex of the lung in many cases.

"In those cases of apparent localized tuberculosis of the larynx, the removal of hypertrophied or ragged tonsils, which usually accompany such a condition, is marked by a cessation of many of the local symptoms.

"A diseased tonsil, that is, one which is subject to repeated attacks of tonsillitis, or in which the crypts contain bacteria, adds to an already existing pulmonary tuberculous infection sufficient new bacterial poisons to stimulate inflammation or flame into activity a slumbering localized ulceration in the lungs. It therefore seems reasonable to me that in all suspected cases of pulmonary tuberculosis the tonsils should be inspected, and if possessing the slightest evidence of possible irritation, should be removed in their capsules."

Another disease often intimately associated with diseased tonsils is rheumatism, with its complications and sequellae, as endocarditis, myocarditis, arteriosclerosis, arthritis, pericarditis, pleurisy, peritonitis, perineuritis, and myositis (muscular rheumatism).

We have had several interesting cases of this nature. One case, Mrs. W. McC., age 48, has always had much trouble with her tonsils, averaging several attacks during the year. Following each of the last two attacks of tonsillitis by a week or ten days was a severe attack of acute articular rheumatism. After complete removal of the tonsils in their capsules she has not so far suffered a recurrence of the rheumatism, though of course, it is too soon definitely to say she will not be further troubled in the future.

Another patient, M. H., age 8, has for the past two and one-half years suffered severely from recurrent tonsillitis. Associated with and following the tonsillitis there has been at least one well-defined attack of acute articular rheumatism and other less well developed attacks, complicated with rather serious valvular disease. One of her earlier attacks of tonsillitis was followed by an acute nephritis, with oedema of the eyelids and of the lower extremities, and with albumen in the urine. Her attending physician, a man of considerable scientific attainment, assured me that she presented no evidence of diphtheria in the above mentioned attack of tonsillitis. The causation

works similar to that operative in diphtheria and scarlet fever in the production of nephritis while it is thought that the same infectious process is responsible for both the tonsillitis and the rheumatism, the tonsils acting as the portals of infection for the latter. Instances similar to the above are frequent, I believe. Many observers have testified to the good effects on rheumatism and its complications and sequelae by radical removal of the tonsils, thus proving the dependence of these affections on the tonsils as portals of entry.

Acute nephritis, as in the above cited instance, is another disease that has been shown often to have a very intimate relation to and dependence upon tonsillitis. Since 1881, when Leyden attempted to show that nephritis is sometimes secondary to simple angina, many observers have come forward with evidence showing conclusively that tonsillitis is frequently followed by acute nephritis. More recently, Loeb, of St. Louis (*Jour. A. M. A.*, Nov. 12, 1910), cites 4 cases in his own practice, reviews the literature on the subject and draws the following conclusions:

"1. Acute nephritis results from acute tonsillitis far more often than is generally believed.

"2. The symptoms ordinarily are not manifested until some time after the inception of the disease.

"3. The nephritis is of the hemorrhagic type and differs from that of scarlet fever in that pyrexia, edema and oliguria are not marked symptoms of the disease. In addition, it follows the angina and is not concomitant as in scarlatina and diphtheria.

"4. Judging from the cases reported, there must be many in which a mild nephritis occurs incident to a mild tonsillitis, which goes on to resolution without physician or patient being conscious of its presence.

"5. As each case of lacunar tonsillitis may be a potential source of acute nephritis, it is incumbent on practitioners to observe the urine, not only during the height of the disease, but for some time after as well.

"6. Spontaneous or idiopathic nephritis is probably often due to a tonsillitis that has not been considered as an etiologic possibility.

"7. Chronic affections of the kidneys may very well owe their origin to unrecognized acute attacks of nephritis of tonsillar origin.

"8. Much light may be shed on this subject

by a study of the urine in a large number of cases of acute tonsillitis."

In producing general infection, septicæmia, etc., tonsillitis may act like any other focus of inflammation. This is more especially true in cases of peritonsillar abscess. This is due to infection through the crypts, generally the upper, associated with imperfect drainage. And on account of its situation, the absorption of toxins, and finally of pathogenic microorganisms may produce disastrous results.

One would hardly think of the tonsils as ever causing hernia and varicose veins, but the rationale is simple. Tonsils often cause, as one of their chief symptoms, coughing. Also, as has been shown, they may produce gastro-intestinal disturbances, such as constipation and diarrhœa, and these acting singly or together are recognized factors in the production of hernia and varicose veins.

I have discussed rather at length the relations existing between the tonsils and the above mentioned conditions in order to emphasize the importance of the tonsils in the production of diseases that the general practitioner is called upon daily to treat. The knowledge of medicine and diseases is advancing by leaps and bounds, and in no field is there greater progress being made now than in the special field of the eye, ear, nose and throat. And many of these advances have intimately to do with diseased conditions vitally interesting to the general practitioner.

Other conditions than those mentioned above and thought to be secondary in some instances to disease of the tonsils are as follows: bronchitis, pneumonia, appendicitis, meningitis, parotitis, skin and eye lesions, acute mania, leukemia, hyperthyroidism, aneurism, erysipelas, paraplegia, osteomyelitis, oophoritis, orchitis, etc.

It seems hardly necessary to add that in all these conditions, where the tonsil can reasonably be shown to be the causative factor, that there is but one treatment for the tonsil, and this treatment will be found to be largely curative or at least beneficial to the secondary affections, namely, total removal in its capsule.

Owing to the six months' rule at Catawba Sanatorium, Va., there are openings every few days for new patients, so that those wishing admission should file their applications at once.

THE DIAGNOSIS OF INCIPIENT TUBERCULOSIS.*

By JOHN J. LLOYD, JR., M. D., Catawba Sanatorium, Virginia.

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My reason for preparing a paper on a subject, about which so much has already been written, is best given by a quotation from Dr. Norman Bridge's book on tuberculosis:

"In the care of the sick there are few things of more importance than the early discovery of tuberculosis; for early diagnosis makes possible the most effective treatment—which is early treatment—and if made in every instance it would lead to a great increase in the already large percentage of recoveries in the disease."

That is my excuse, and I feel that if by reading this paper to-day any of us are helped either directly or indirectly in our diagnosis, our crusade in Virginia will be helped just that much.

Incipient tuberculosis, corresponding to division I of the classification of the National Association, is defined as that stage of the disease in which there is a slight initial lesion, limited to the apex, or a small part of one lobe. No tuberculosis complications and slight, or no constitutional symptoms. Slight elevation of temperature and slight acceleration of pulse at any time during the 24 hours. Expectoration is usually small in amount, or absent; tubercle bacilli may be present or absent.

That is a hard diagnosis to make in many instances and one very frequently not made at all. But the results of treatment at this stage of the disease are so wonderfully successful, that early diagnosis is what should be aimed for.

Before taking up the symptoms of onset, I wish to say a few words about the physical signs. Light percussion may elicit slight dullness over the affected area, but in truly incipient cases, most often there is no dullness. Generally the first change to be noticed is what is termed "rough" breathing.

To quote Dr. C. L. Minor, in Klebs work on Tuberculosis,—“Until quite recently it has been confounded with harsh, sharp, or puerile respiration, with which it has nothing to do (Sahli '02). It is related to interrupted respiration, and probably due to slight narrowing

or uneven surface of the bronchioles (by tubercles here located) into which the alveoli open, and where the normal vesicular murmur is formed in health (Grancer '90), or, according to Turban ('99), to a rapidly interrupted entry of air into alveoli surrounding the tuberculous deposits.”

This type of respiration is most common in the suprascapular fossa, in the clavico—sternal angle, and in the supraclavicular fossa in the order named, but it can often be found farther down in the lung on the advancing border of the disease, and its appearance in isolated spots often gives early warning of the development of a new focus.

The next in earliness of appearance is feeble breathing, in which both inspiration and expiration are lessened in **intensity**.

Interrupted, cogwheel breathing is often found, and if not found in a patient who is very nervous or chilly, it speaks for tuberculosis.

Harsh respiration is confounded with “granular” or “rough breathing.” Harsh respiration, W. Walch defines as respiration which has lost its soft breezy sound and becomes dry and sharper and blowing, and these changes are generally more marked in expiration than inspiration.

This type of breathing has, until recently, been considered the early sign of tuberculosis in an apex, but latterly it has been recognized that harsh respiration is not as early as the other types described above.

To quote Minor again—“Nevertheless, since few patients are seen in the very incipency of the trouble, harsh respiration, especially the expiratory phase, will be the change ordinarily found by the physician at his first examination in the majority of incipient cases. and if it is confined to an apex and heard on quiet breathing, it has great value in diagnosis.” “This type of breath sounds is due to the narrowing of the bronchi and condensation of lung tissue, and demands, therefore, a relatively extensive lesion for its production.”

Dr. L. Brown has found the heart sounds to be unduly transmitted to small areas of consolidation, and this sign is of practical value if heard at the right apex.

A few fine rales may be heard over a small area on deep breathing, or it may require a slight cough just at the end of expiration,

*Read before the South Piedmont Medical Society, at Lynchburg, Va. April 18, 1911.

followed by a quick inspiration to elicit the rales.

Rales heard continuously over an apex or a small area of the lung are, to all intents and purposes, pathognomonic of tuberculosis.

Dr. F. M. Pottenger has described a sign which he calls muscle rigidity, and for which he claims great usefulness. "This sign," he says, in describing it, "consists of a spasm of the muscles over the area of infiltration caused by the irritation transmitted to the muscles from the inflamed areas in the lung."

This muscle rigidity, he claims, and others have verified his findings, is present over any active inflammatory process located superficially in the lungs. It is demonstrated by very light palpation with the palmar surface of the tips of the fingers. Over the active lesion of the muscles will be felt to strut under the fingers and over the opposite side, corresponding, they will be soft. This spasm of the muscles produces an apparent fullness of the neck over an active process in the apex, and Pottenger thinks he can very often tell by this sign alone where an active lesion is located.

Lagging of the affected side is caused by this same contracted state of the muscles, and is also described by Pottenger. This lagging is best seen by standing behind the patient and placing the two hands over the two apices with thumbs on the spine. A full breath will show considerable limitation in the affected side. These two signs, I believe, are reliable, and in a doubtful case will help us make a diagnosis.

Perhaps the most important thing to remember in the examination of the patient is, that physical signs of disease may be entirely absent for a long period after symptoms are present. This is not surprising, when we think of the relatively small lung area that is available for examination, and that the process may be deep-seated and entirely overlain by normal lung tissue for a very long time before it comes to the surface and is demonstrable.

The symptomatology of early tuberculosis is so varied, that we may expect to meet it under the guise of almost any condition.

While this is true, yet there are several symptom groups which are very suspicious, and should always put us on our guard. We often see patients who complain of loss of appetite, no energy for work, and who are

so tired that they are on a drag continually—a night's sleep does not rest them. They may or may not have lost a little weight—run down is what the patients call it. A tonic, advice to take a rest, and change of environment works wonders for a while, but how often do we see this same class of patients later develop a cough or have a slight hemorrhage, or go down into a fever or pneumonia?

Frequent or persistent deep colds, and the "Winter Cough" are not at all uncommon early manifestations of the disease.

Hemoptysis is, fortunately for us, a frequent early symptom, that calls both the patient and the doctor up with a bump. If we can exclude pneumonia, influenza, uncompensated valvular lesion, and hemophilia, the diagnosis is practically made.

Pleurisies, either with or without effusion, are generally tuberculous. Pleurisy is not always accompanied by an acute pain, but it may be only a dull ache or pain. Pain in the chest, so often complained of in early tuberculosis, especially that boring, dull ache between the shoulders, is generally pleuritic, and is very common.

A two hourly temperature chart kept for four or five days, will give us valuable aid. The rise, generally in the afternoon, may not be much, only a few tenths of a degree, but is very suggestive.

Pneumonia, influenza and typhoid fever are frequently followed by, or are the real beginning of tuberculosis, and these, with measles, whooping cough and bronchitis, often excite a previously latent process into activity, as does a pregnancy.

These are the more common modes of onset, and I have tabulated in the following list, the chief symptoms of disease for which the first one hundred patients at Catawba consulted their physician:

Cough	21
Hemoptysis	17
Debility	14
Pleurisy (two with effusion).....	9
Persistent Colds.....	8
Loss Weight.....	7
Influenza	6
Pneumonia	4
Fever (afternoon).....	4
Pain in Chest.....	3
Night Sweats.....	2
Typhoid Fever.....	2
Shortness of Breath.....	1
Enlarged Glands.....	1
Hoarseness	1

Tuberculin, if given in proper dosage by one familiar with its use, is not only a harmless procedure, but one which makes the diagnosis positive. If a general reaction occurs after a small dose, we are positive we have tuberculosis to deal with, and on the other hand if a reaction does not occur after a maximum dose of eight or ten milligrams has been reached, we may feel equally sure we are not dealing with it.

The expectoration, if there be any, should always be examined for the bacilli for, while they are not usually present in early cases, if we do find them the diagnosis is established.

I have intentionally reversed the order of examination of patients, because I believe the symptomatology to be of more importance in early cases than the physical signs, and therefore I put it last.

Finally, I would say that where we can not exclude tuberculosis, we should, in justice to our patients and to ourselves, call for a competent consultant to decide, just as we do in any grave acute illness. Tuberculosis does not generally kill quickly, as does a fulminating appendicitis or perforating gastric ulcer, but if unrecognized, and therefore untreated, the result to the patient is of such far-reaching import and entails so much suffering, that we should constantly keep it in mind and not look on any case of a possible tuberculosis lightly.

LOCAL TREATMENT OF GONORRHOEIC INFECTIONS.

By M. C. SYCLE, M. D., Richmond, Va.

Let me start this paper by saying, gonorrhœa is too often grossly mistreated. I deprecate the use of strong irritating injections because they aggravate the disease and damage the urethra. The treatment of acute anterior urethritis by irrigations is to be condemned, because they cause an extension of the disease by continuity. During the past few years, the results in my private practice have been better than ever before. This statement is based upon the observation of several hundred cases of gonorrhœa at all stages. The reasons for this improvement are ascribed to careful local treatment and to having absolutely abandoned the use of any drug as an injection which could cause the slightest irritation.

In a general way, my method of treatment

is as follows:—When a patient comes to me for treatment, after making a positive diagnosis, I give him a printed list of instructions, viz.,—“Instructions to those having gonorrhœa or clap.” Gonorrhœa is a local, contagious disease which requires treatment until the physician pronounces it cured. To avoid infecting others and to prevent complications, such as bubo, stricture, swollen testicles, etc., the following rules should be carefully observed:

1—During the first week, walking should be limited. When the discharge is profuse, you should keep off your feet as much as possible.

2—Do not use alcohol in any form, as it always prolongs the disease. Drink milk, tea, Vichy, Seltzer and from six to eight glasses of water during the day. Avoid all sexual relations until you have been pronounced cured by your physician, as the disease may be given to a woman, even after the discharge has apparently ceased. When it is present you should avoid sexual excitement, as erections always aggravate the disease.

3—Always wash the hands after handling the parts. The discharge, if carried to the eye, will cause blindness.

4—Sleep alone and be sure that no one uses any of your toilet articles, particularly towels and wash cloths.

5—Be sure that the bowels move every day. If they are inclined to be constipated, take a dose of Rochelle salts before breakfast.

6—Do not use mustard, pepper, horse-radish, or stimulating sauces on your food.

7—Burn all soiled dressings.

For acute gonorrhœa, I prescribe a light diet with very little meat, and no fats, fruits, or alcoholic beverages, but allow as much skimmed milk as the patient can drink. If the infection is confined to the anterior urethra, I generally use an injection of two drachms of a ten per cent. solution of argyrol, held in the urethra about ten minutes. This injection is made morning, noon and night. Internally, I give them a capsule containing salol, belladonna, terebene and sandalwood three times daily. This treatment is practiced for one week, during which time the discharge will almost cease. If at the end of one week the urine remains continuously shreddy, a weak solution of astringents is employed, and of these drugs zinc sulphate, hydrastin, or berberine muriate, are useful, but above these all

I prefer nizin (a zinc salt of sulphanilic acid), about two grains dissolved in one ounce of water making a suitable injection. Here let me again emphasize that these astringents should not be used during the first week, and never in solutions sufficiently strong to produce pain or irritation.

In many cases I have tried permanganate of potash, but with not very much success, so I have discontinued this treatment. Irrigation of the deep urethra by means of hydrostatic pressure is injurious in the majority of cases of acute gonorrhœa, and aids the development of complications, which very often bring on orchitis.

It must be remembered that we have to deal not only with the gonococci, but with the destructive action of the organism. In other words, destroying the gonococcus does not by any means imply the cure of the disease, as there always remains a condition of catarrhal urethritis, which requires a particular line of treatment.

If a case of gonorrhœa is seen in the early inflammatory stage, when ardor urinae and chordee are the most annoying symptoms, I generally give the patient powders of salol, potassium bromide, sodium bromide, each 2 1-2 grains every three hours. At the same time a hand injection of a five per cent. solution of argyrol is given. At the end of the third week, the patient enters upon the stage of decline, or the mucous terminal stage. Here we need astringents to build up and restore the integrity of the damaged mucous membrane. A good plan is to use a five per cent. solution of argyrol, night and morning, and throughout the day any of the following astringents may be used:

R Zinc sulphate, grains 10.
Bismuth sub-carb., drachms 2,
Liquid hydrastis, ounces 1-2,
Distilled water, ounces 4.

R Zinc sulphate, grains 11.
Lead acetate, grains 5,
Liquid hydrastis, ounces 1-2,
Distilled water, ounces 4.

R Carbolic acid, grains 4.
Zinc sulphate, grains 11.
Powdered alum, grains 11,
Distilled water, ounces 4.

If the morning drop, a thing which has baffled so many physicians, continues, and causes

the patient's nervous system to be greatly disturbed, Neisser's bacterin, which is so often used for gonorrhœal rheumatism by the intramuscular method, will be found of much help as an injection into the urethra. The bacterin comes in small bottles, each c.c. containing five hundred million killed bacteria. Of this, I inject about six drops three times a week. I have found it to cause a slight temperature after the first treatment, but at the end of the last injection, the morning drop eventually disappears without any further complication. I now irrigate the anterior urethra with a warm solution of boracic acid, in order to remove any accumulated secretions that might be left. I then make a deep instillation of a twenty per cent. solution of argyrol once daily.

Statistics of several hundred cases treated by this method show a great diminution in the amount of pain, and a shortened duration of the disease, with the extreme rarity of many complications.

Most cases of chronic gleet are due to ulcerated conditions of the urethra. After determining the exact location of the individual ulceration, the method of treatment depends upon whether the ulcers are localized or whether there is a co-existent general hyperemia of the urethra. If general hyperemia is present, we should proceed with mild astringents in order to rid the urethra of the mucopurulent accumulations. About four weeks of this treatment, being careful in the use of instruments, will nearly always heal the ulceration.

GONORRHOEA IN THE FEMALE.

A case came under my observation. Miss A. A., aged 20, suffering from an endometritis, urethritis and typical symptoms of gonorrhœa. The microscopic examination was positive. In this patient, the vagina was dilated by means of a speculum to the fullest extent so as to reach every portion of the vaginal mucous membrane; a forty per cent. solution of argyrol was applied to this area, as also to the urethra, by means of a cotton-tipped probe. The interior of the uterus was then freed of the accumulated secretion by a cotton-wrapped applicator and then the argyrol solution was applied to the inner surfaces of the cervix and body of the uterus. These applications were repeated two or three times, the treatment being carried out on every second or third day.

After the eighth day, no gonococci could be found. For home treatment, the patient was ordered to use a vaginal douche of from two to four quarts of hot boracic acid solution, taken in a recumbent position.

In conclusion, let me state I depreciate strongly the treatment of anterior urethritis by means of irrigations, because of the danger of spreading the disease to the posterior urethra. Irritating injections of any kind should never be used in acute gonorrhœa, because of the certainty of occurrence of a mixed infection and the extension of the disease by continuity to the urethral follicles. Astringents such as zinc, hydrastin, bismuth and lead should never be used in acute stages, but should be reserved for the post-gonococcic period, when the urine remains shreddy.

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THE INDICATIONS FOR GASTRO-ENTEROSTOMY.*

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The object of this paper is to determine as far as possible the disease in which the operation of gastro-enterostomy is of use, and in what stage of each particular disease it is to be resorted to. I speak of the operation of gastro-enterostomy, meaning the posterior rather than the anterior, because when possible this is the one of choice, as giving the best results with the least danger of after complications.

When the different diseases are considered in regard to this operation, it will be borne in mind it is not always the operation of choice in these cases, but has its place even if only as a last resort.

THE RESULTS OF THE OPERATION UPON THE STOMACH ARE—

1.—To diminish peristalsis—allowing rest of the organ.

2.—To convert it into a conducting tube like the esophagus, yet not entirely destroying its usefulness as an organ of secretion and absorption, thus giving more or less physiological rest to the secreting membrane.

3.—To prevent the accumulation of food and gas in this part of the digestive tract.

4. To allow a dilated or relaxed organ to contract.

Considering these results separately—

First, to diminish peristalsis, allows rest to the organ and does for the stomach what a plaster cast or a splint does for a fractured bone. Acute and chronic ulceration, hemorrhage, wounds, perforation, and hypersensitive conditions of the gastric coats are among the conditions corrected by the operation. It also prevents the pain attendant upon the stretching of adhesions.

Second, it relieves the organ of much of its usual digestive work that has become a burden in such conditions as ulcer and cancer. It also prevents the excessive formation of hydrochloric acid that is so irritating to an inflamed or ulcerated mucous membrane.

Third, it prevents the train of very painful and disagreeable symptoms due to the distention of the stomach with food and gas that takes place in pyloric stenosis, hourglass contraction, dilatation, adhesions, relaxation, prolapse of the organ and painful dyspepsias not yielding to treatment.

Fourth, it allows a dilated or relaxed stomach that has lost much or most of its secretive and absorptive powers to contract and approach the normal.

THE RESULTS OF THE OPERATION UPON THE DUODENUM.

Most of what has been said about the results upon the stomach applies to the duodenum. Distention of the organ with gas and food, stenosis except that due to kinking and to adhesions, and what was said of the dilated stomach have but slight application here.

Acute and chronic ulcer, hemorrhage, perforation, stenosis, kinking of the first part from adhesions, or from a prolapse of the stomach, stenosis due to contraction of the scar tissue of an old ulcer, a perforating gall stone, or bile duct disease, are the most common conditions connected with the duodenum for which the operation should be performed. With this brief summary of the effects of the operation upon the stomach and duodenum, the consideration of the individual diseased conditions for which it is performed naturally follows.

Spasm of the Pylorus.—Whether this condition is due to irritation from the stomach itself or from disease of the gall bladder or ducts, pancreatitis, peritonitis, appendicitis or

*Read before Clinical Society of Washington, D. C.

some other abdominal disease, it is certain that some cases fail to respond to medical or appropriate surgical treatment. Among these cases are many this operation will cure or alleviate.

Hemorrhage.—In many cases of acute gastric and duodenal ulcers, hemorrhage resists medical measures. These should be explored, the bleeding point sought and ligated if possible. Too often the vessel cannot be located and it is in these cases the operation gives such good results by diminishing peristalsis and giving the bleeding vessels a chance to close and heal.

Chronic Ulceration.—Both in the stomach and duodenum chronic ulcers may demand operation for—first, repeated hemorrhages; second, relief from pain; third, to prevent a fatal termination from emaciation and exhaustion.

Operations should be done only when thorough medical measures have failed to improve the condition, and each surgeon must determine for himself when to operate. It is not wise to wait until the patient is emaciated and exhausted by long suffering and repeated hemorrhages.

Perforation.—A very small percentage of cases of perforation of the stomach and duodenum from acute and chronic ulcers recover spontaneously. This is brought about by a plastic peritonitis similar to that in the recoveries from perforated appendices. The recoveries are so few they should not make us hesitate to operate early in all cases. In this condition, as in many others considered in this paper, I do not advocate gastro-enterostomy in all instances. In many it will be the operation of choice, in others it has a place only as a last resort to prolong life.

Obstruction of the Pylorus.—Obstruction of the pylorus, whether congenital or acquired, cirrhosis, and hourglass stomach, when causing a serious condition from lack of nutrition no matter what the special symptoms resulting, may be relieved by this operation. In selected cases, pyloroplasty, divulsion or other surgical measures may be more appropriate.

Adhesions of the Stomach and Duodenum.—These may cause so much pain or so interfere with the functions, either mechanically or reflexly, as to yield to no other treatment than operation.

Dilatation.—A thin walled stomach with im-

paired digestive powers results from atrophic gastritis. Medical treatment is slow and often not satisfactory. Much relief can be obtained by draining the stomach permanently, thus allowing the organ to contract from partial disuse.

Prolapse of the Stomach.—If the pylorus remains in its usual site and the stomach descends, acute flexion in the first position of the duodenum occurs, which offers some impediment to the outflow of the gastric contents. The stomach is prone to dilate and the food to accumulate and decompose. The neurasthenic symptoms with those of the altered digestion often resist general treatment. Undoubtedly many of the worst cases would recover sooner or have fewer relapses if subjected to gastro-enterostomy.

Cancer.—Early partial gastrectomy in selected cases offers the best chance of a cure. Quite a large per cent. of these cases are cured, and others have several years of life spared them. Either as an adjunct to the partial gastrectomy or as a means of alleviating the suffering of inoperable cases by relieving the stomach of the irritating food, gastro-enterostomy is performed.

Painful Dyspepsia.—Painful dyspepsia due to causes that cannot be found or if found cannot be relieved sufficiently to make life comfortable could possibly be relieved more by this operation than by any other means. Certainly it is worth a trial.

In conclusion, I will say the operation is easy of performance, is attended with but little danger, and gives so much relief in suitable cases that its more extended use in many cases formerly looked upon as too slight to justify it, is desirable.

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SOME COMMON ERRORS IN OPERATIVE TECHNIQUE.*

By RICHARD P. BELL, B. A., M. D., Staunton, Va.

Go into almost any operating room and watch proceedings with a critical eye, and sooner or later you will see a flaw in the technique which apparently goes unnoticed. It may be a glaring break which the newest probationer should not be guilty of, or it may be a very delicate inconsistency which will puzzle

*Read by title before the Shenandoah Valley Medical Association, at Winchester, Va., May 24, 1911.

an old student of technique to correct; but great or small the error is usually there, and you will see it if you watch long and hard enough.

It is well nigh impossible to maintain an absolutely perfect asepsis theoretically speaking; practically it is possible, and unfortunately very fair results are obtained with a very careless technique. It is this latter fact that is responsible for the prevalence of so many errors in our operating rooms. Men are prone to carry their asepsis no further than they deem absolutely necessary. They are content with nine uninfected cases out of ten and excuse the one infection by laying it on the air, catgut, or some other improbable source; or worse they do not attempt to explain their infections at all.

The tendency and aim of surgeons everywhere is toward a simplified technique. This is commendable if simplicity is not obtained at the expense of efficiency. Far better is it to have a thorough and complicated technique than a careless and simple one. A thorough technique need not, however, be complicated. Our constant aim should be a theoretically perfect asepsis, rather than a practically adequate one. Simplicity should be secondary to thoroughness.

There is no middle ground in asepsis. An object cannot be fairly or moderately sterile. It is either clean or dirty and between these two conditions is a great gulf fixed. When a sterile object comes in contact with an unsterile one, the first object becomes theoretically just as unsterile as the second, no matter how brief the contact, nor how small a portion the sterile surface is involved. Control of contact then means control of asepsis. This is the great underlying principle in the maintenance of asepsis, and if it were strictly adhered to, there would be no breaks in technique; unfortunately, however, this is not the case. We will consider a few more frequent sources of error.

It is a very common thing to see an operator or assistant, after scrubbing hands and forearms well, soil both hands while soaking them in the various antiseptic solutions, by rubbing the solution into the arms at a higher level than the upper limit of the scrubbed area. I have formed a habit of watching for this mistake in every operating room I enter, and it is

surprising how often it has been observed. I recently saw a surgeon take a nurse severely to task for handing him a scrubbing brush which had not been boiled. Then after he had obtained a sterile brush and had scrubbed his hands and forearms vigorously and well, he vitiated the whole performance while soaking in alcohol by passing and repassing his clean hands vigorously across his dirty upper arms in the process of rubbing alcohol into the flexure of his elbow. How utterly inconsistent! He strained at a gnat and swallowed a camel.

In putting on gloves, an error commonly made is to put on one and milk the fingers on tight with the other bare hand. Granting that the bare hand is as clean as it is possible to make it still if there is not some element of risk from the skin of the hands, why wear gloves at all? Both gloves should be put on without bringing their outside surface in contact with the skin and then the fingers milked down, if necessary, with the opposite gloved hand.

It is in the matter of operating gowns that perhaps more errors are made than in any other item of the personal technique. The object of wearing a gown is to cover all parts of the person that may in any way in the course of the operation directly or indirectly come in contact with the field. The hands are covered with gloves, and the gown is supposed to provide a sterile covering for the rest of the body. The arms of course are the parts of an operator's person which, next to his hands, are most exposed to contact with the field of operation, and yet it is astounding how uncommon a thing it is to see long-sleeved operating gowns. I believe it may be safely said that in more than one-third of the operating rooms in the United States, the gowns in use have short sleeves, and the lower arm, elbow and forearm above the glove are left absolutely uncovered. What an absurd inconsistency it is to see an operator drape his abdomen, chest and shoulders in an aseptic garment and then deliberately leave uncovered and exposed his dirty elbows, to be rubbed back and forth across the clean field of operation. It may be said in answer that the forearm and elbow have been scrubbed and soaked in antiseptics and are presumably as clean as the hands. Even so, if the clean hands are covered with gloves, why not cover the clean

arms with sleeves; but as a matter of fact, there is not one man in fifty, who, in scrubbing up, really cleans his elbows adequately, and in most cases they are not cleaned at all. The sleevelets worn by many operators are to be condemned. They are hard to put on, and the process of pinning them to the short sleeves of the gown is fraught with the almost certain risk of soiling the hands of the person manipulating the pin.

Only recently, I saw a nurse, cleaned up and with gloves on, pin the sleevelets on an operator, and in doing so she entirely overlooked the obvious fact that the point of the safety pin, after it had been stuck through the sleeve was dirty. She handled this point and then returned to the instrument table and proceeded to thread needles with her dirty hands. This one small slip vitiated the whole aseptic technique of this operation. The pin point was dirty, the nurse's hands touched it and became dirty, and every instrument and suture subsequently used in the operation passed through her hands, and in turn became dirty. The importance of absolute control of contact can be seen from this apparently trivial incident, also the danger of sleevelets and the necessity for a long-sleeved gown, which can be put on without risk. So much for the personal technique of the operating team, though many other points might be profitably looked into.

When we come to consider the technique of the patient, namely, the preparation of the skin and the isolation of the field of operation from surrounding parts, we arrive at the most fertile of all the fields of error, and the source of most post-operative infections. The iodine method of preparation with dry shaving and no scrubbing, has not been in use anywhere for a long enough time to be unhesitatingly adopted by the vast majority of operators. Its advocates, among whom the writer numbers himself, are enthusiastic over its merits, and if their beliefs are borne out in the next year by increased experience with this method, a revolution will occur in the preparation of the skin. The old soap and water technique will doubtless persist, however, under any circumstances in operations on certain body areas, and until it is abandoned, we cannot eliminate it from such considerations as the present. The iodine technique will not be touched on here.

The question of the value of preliminary scrubbing up of the patient on the day before operation, still seems to be an unsettled one, many hospitals clinging to the procedure, while, perhaps, more have given it up. The writer is strongly of the opinion that in any but the iodine technique, preliminary ward preparation is not only useless, but a distinct menace to good technique; the latter for several reasons. First, that too much dependence is placed in this previous cleaning and that the final cleaning is neglected by reason of it; second, that the previous cleaning is in most cases done in bed by a nurse, with many other duties, and therefore it cannot be depended on to be as thorough as if done in the operating room by an assistant who is especially trained to perform this duty; third, that the patient may tamper with the protective dressing between the time it is applied and the time of the operation and thus a field supposedly clean may be thoroughly dirty when the patient is placed on the table. These are a few of the reasons why previous cleaning up is dangerous. Its uselessness has been proven beyond the shadow of a doubt by the results in the hospitals where there is no cleaning up save in the operating room. Cushing's results alone should convince the most skeptical of the uselessness of ward preparation. In his series of cases, all of which are operations on the head, there has never been a wound infection or meningitis, and it is his invariable rule to shave and cleanse the scalp on the operating table with no preliminary ward preparation. If the scalp can be treated thus, certainly it is safe elsewhere on the body surface.

There is an art in preparing a field for operation which is not grasped at once. The process is rather a complicated one and tests one's knowledge of technique to the utmost. At first glance it seems a simple proposition to scrub up an abdomen, for instance, apply several antiseptic solutions and isolate the field with sterile sheets. But go into the average operating room and carefully and critically watch the performance of this seemingly simple detail, and you will see things which will open your eyes to two facts: first, that it is a more complicated procedure than is at first apparent, and second, that the average man who performs this office does not realize its import and has never put more than a pass-

ing thought on the subject of making his work really effective. Taking for instance the cleaning of an abdomen—the first error which will commonly be observed, will be the placing of oil cloth or towels well up over the pubes and well down over the costal margin, leaving a quadrilateral area which it is proposed to scrub. Now it is obviously impossible to cleanse the line of junction between these cloths and the skin, and they constitute collecting places for the detritus, which is scrubbed from the abdomen and which is in turn redistributed over the abdomen every time the sponge is passed over the edge of the cloths. To avoid this error, the skin should be bared for several inches beyond the furthest limits of scrubbing in all directions, and the sponge should come in contact with nothing but the skin of the patient and the hand of the scrubber. Sponges contrary to the usual custom, should be changed frequently, as after one has been used for a while it becomes just as dirty as the skin it is scrubbing. This brings us to by far the nicest point in the course of the preparation, namely, the transition point between the dirty abdomen, and the clean abdomen. When the cleaning is started the abdomen is of course dirty, and the gloved hands of the scrubber, as soon as they touch the abdomen, become immediately equally dirty. After the scrubbing has progressed for a time, the abdomen becomes in reality cleaner than the hands of the scrubber, and any further application of the hands will consequently do more harm than good. At this point the scrubber should remove his gloves and after the abdomen is thoroughly flushed off, scrub it a few minutes longer with his clean bare hands and a sterile sponge. The abdomen is then dried with a sterile towel and ether and alcohol are applied in turn with sponges held in clamps, after which the transition point between the unsterile and clean states may be said to have been reached and the remaining preparation is to be done with sterile gloved hands.

The procedure of preparing the patient's skin is thus seen to be a steadily progressive change from an unsterile to a sterile condition, and this change cannot be accomplished by a single pair of hands; nor can it be accomplished without taking note of the fact that the cleaning process is progressive

and that there is a definite transition point between the unsterile and the sterile states, previous to which the skin must be considered dirty, and subsequent to which it must be considered clean. Until this idea is grasped, there cannot possibly be intelligent and adequate sterilization of the operative field.

In the last detail of preparatory technique, namely, the sterile covering for the patient's body and for the instrument and dressing tables, there are two errors which are very commonly made. The first is the placing of reliance in only one thickness of thin sheeting, regardless of the possibility of small holes, to separate the clean field from the unsterilized matter below. Two thicknesses of intact cloth should invariably be used. The second error is the absolute disregard of the capillarity of cloth. A wet spot an inch in diameter on a sterile sheet or towel covering an instrument table, furnishes a hundred columns of liquid, capable of transmitting micro-organisms and running from the dirty table below through the meshes of the cloth of the sterile instruments above. The risk can be easily obviated by a little care on the part of the assistant having charge of the instruments.

The above are a few of the numerous errors in aseptic technique which are daily made in very many operating rooms. To thoroughly discuss the whole subject would require the scope of a volume of considerable size. It is simply desired here to touch upon some vital points, sufficiently, perhaps, to cause a little more thought to be bestowed on a subject to which entirely too little thought is given.

Whenever you go into an operating room, enter with a critical eye. Watch the method of cleaning the hands of the operators, of putting on gloves and gowns; watch the preparation of the patient's skin; watch the method of covering the instrument table, the dressing table and the body of the patient; watch all these things intently, and while you watch pick flaws and look for defects. And be sure to apply the same critical scrutiny to yourself when you operate.

Above all, be consistent in your technique, and have a reason for what you do. Do not agonize over irrelevant details such as the asepsis of the table on which the patient lies, or of the floor and walls of the operating room, and then overlook some apparently trivial point which is in reality of vital import-

ance. It is very well to operate in an immaculately tiled room with a shining glass and metal table and a wealth of costly furnishings, if these things can be had, but such appurtenances do not constitute a good technique, and are really the least important points in it. If there is no dust in the air of an operating room and no flies are present, it matters not one particle whether the floor is tiled or no, or whether the walls are of marble, plaster or rough boarding. With the elimination of dust and insects we can forget air infections. The gist of aseptic technique may be summed up briefly, thus:—First, rigid sterilization of the operative field, the latter being understood to include all objects involved in the procedure of operating; and second, maintenance of asepsis by absolute control of contact between the field and extraneous objects.

Clinical Reports.

STAB WOUND OF THE HEART---DRAINAGE OF PERICARDIUM---RECOVERY.

By H. S. LOTT, M. D., Winston-Salem, N. C.

Cases come to us bringing with them a mixture of emotions; and, after all, it is not the premeditated, but the accidental surgery that oftentimes presents the most interesting features; cases in which we must feel our way, step by step, with the hope that our efforts will not lessen the chances for a successful and living issue.

This young man walked into a drug-store one Saturday night. He was supported by a friend, and, as he passed me, I noted that he was bleeding freely, seemingly from a wound in the chest. Following him to the rear of the store, I found that he had been stabbed through the clothing in the left chest, and he fell to the floor, with no radial pulse, before an ambulance could be called. Hurrying him to the hospital, a hypodermic of morphia and strychnia was ordered, and he was placed upon the table for careful examination. Very slowly there was a return of the radial pulse, but it was very small, and the heart seemed to labor with much effort.

On exposure, the wound was found to be about midway of a line drawn just a little up-

ward from the left nipple to the sternum. With very little delay, save for cleansing and ether anæsthesia, a free incision was made, exposing the fourth costal cartilage, which had been cut through transversely, the weapon having entered the structures beyond, and in such direction as to indicate some injury to the heart. Upon the removal of this cartilage in two sections and the introduction of the fingers into the wound, blood clots were found, as also a ragged puncture through pleura, lung structure, pericardium, and into the heart muscle, for a depth quite sufficient to be easily perceptible to the touch, although not penetrating into its cavity, and situated at a point in the upper third of the ventricle quite near to the line of division between this and the auricular cavity. Upon clearing out the blood clots, the sensation was rather a novel one, of holding the apex of the heart in the palm of the hand, and realizing its rhythmic pulsations.

The wound in the muscular wall of the heart was not of such depth as to justify closure with stitches; nor did I feel inclined to close the pericardium and other supervening structures, thus making a sealed wound. But considering the infected weapon, the deep puncture and the unavoidable trauma from blood clots and manipulation, I determined to drain both pericardial and pleural cavities, and make a wide-open game of it all. In order to accomplish this, two pieces of rubber tubing were used, each one of them split open on one side for its entire length, and its lumen filled with a soft gauze wick. One of these tubes, the longer one, was passed through the rent in the pericardium and well down to the limit of the apex of the heart; and the other one, not quite so long, through the rent in the pleura and lung tissue and well down into the pleural cavity, posteriorly. These were fixed in the usual manner with safety pins, and an ample gauze and cotton dressing made secure with a many-tail bandage.

Hypodermics of morphia were given to relieve pain and secure quiet, and during this first forty-eight hours the clinical picture was a most interesting one. The heart had not had such a neighbor before, and its conduct was very erratic, the pulse going all gaits ranging from one hundred to one hundred and forty, and was of a very irritable and resent-

ful character. After forty-eight hours the tubes were drawn up for about an inch and cut off, and this was continued each day until they were out of the cavities. Drainage during this time was very free indeed, so free in fact that it would have been alarming had I not believed that no important vessels were cut; and the dressings were not disturbed. This drainage lessened each day, and by the time that the tube was withdrawn from the pericardial cavity, had practically ceased, and from that source there was no further trouble.

Not so, however, with the drainage from the pleural cavity. After about a week, and also after the long tube was out, a quantity of straw colored serum, as from a pleuritis with effusion, made its appearance, and I deemed it best to put in a short tube and favor free exit of the fluid. This lessened each day, and disappeared, but was followed by an offensive and copious dark drainage, as of necrotic tissue; and I feel sure that there was gangrene of some portion of the lung. During the time of this discharge, the temperature was practically normal, although the patient had some pain, and I kept the wound well open and favored free outlet, both by tubes and by posture. It was discouraging, as I feared that pressure of my first long tube might have caused it; and yet I would not have felt safe without its introduction. However, in the meantime, the general condition of the patient was good. The temperature was normal, or practically so, and while the man was very irritable, he was taking food and sleeping fairly well.

The heart's action became more regular, but its rate was accelerated, ranging throughout this time from one hundred to one hundred and twelve; and finally, when he left the hospital about five weeks from the time of his entrance, the range of the pulse was from eighty to ninety in the twenty-four hours.

The cavity and wound of entrance closed down clean and complete, with never an evidence of infection, and when the young man presented himself at a meeting of the Forsyth County Medical Society some months later, he had gained much in flesh, and declared himself feeling perfectly well. On exposure of the chest, the site of the wound was very evident, and at some distance the apex beat could be

distinctly seen through its thin muscular and cutaneous wall of protection.

Now, in this case, if I served my patient at all, I firmly believe that it was accomplished by drainage: not that it was skillfully used, or always wisely placed, maybe, but it was persisted in until the cavity was clean and closed.

308 *Masonic Temple.*

Proceedings of Societies, Etc.

The Medical Examining Board of Virginia

Met in Richmond, Va., at the Medical College of Virginia, June 20, 1911, 9 P. M.

All the members of the Board were present. The minutes of the last meeting were read and adopted.

The Committee in regard to requiring all applicants to present photograph when registering was not ready to report, and the same Committee was continued.

Dr. R. B. James, chairman of committee on securing permanent hall for meetings of the Board, reported that said committee has been unable to provide such hall.

Motion made by Dr. Dew that Dr. C. T. St. Clair, of Tazewell, be granted duplicate certificate. Adopted.

Dr. Brady moved that duplicate certificate be issued Dr. Lindsay Peters, of San Juan, P. R., when he has complied with the requirements as set forth in circular of information.

Dr. R. S. Martin moved that a committee be appointed to draft resolutions suitable to the memory of Dr. H. M. Nash. The following were named as a committee: Drs. Brady, Warinner and Williams.

Dr. Brady moved that the same committee extend sympathy to Dr. R. M. Slaughter.

The committee reported as follows:

Whereas, Dr. Herbert M. Nash, of Norfolk, has, since our last meeting, joined the great majority, be it

Resolved, That our Board feels deeply the loss of its former vice-president and member, and wish to record their love for him and appreciation of his loyal and active work for so many years upon this Board. A man of high ideals he was always bold in upholding the right, yet ever setting for us all an example of cordial generosity and courtesy which could not but elevate all with whom he came in contact. Of his professional attainments the whole State is aware, and it would be superfluous to attempt to address the

many virtues of one whom "none knew but to love him; none mentioned but to praise."

Resolved further, That a page in our records be devoted to these resolutions, and that a copy be sent to Dr. Nash's family as an expression of our heartfelt sympathy in the love of one whom they even more than we must naturally appreciate.

E. T. BRADY,
J. E. WARINNER,
E. C. WILLIAMS,
Committee.

Whereas it has been necessary for Dr. R. M. Slaughter, of Alexandria, to resign from our Board on account of ill health, be it

Resolved, That we as a Board express, through our Secretary, our deepest sympathy for him in his sickness, in our regret at the loss of an always valuable and trusted member, and also our hope that his recovery may be both speedy and complete.

Resolved further, That the Secretary be instructed to send a copy of these resolutions to Dr. Slaughter.

Dr. O. C. Wright was appointed a member of the Executive Committee, to take the place of Dr. R. M. Slaughter.

Dr. Rennie offered the following resolution, which was adopted:

Resolved, That the Secretary of this Board be instructed to write the Secretary of each county, district and city society of this State, requesting them to investigate illegal practitioners in their district, and if any such are found, to have them brought to the attention of the grand jury and other wise dealt with according to law.

The Committee on Questions reported approval of questions in all sections.

Dr. H. S. Corey was appointed a Committee on Printing.

Dr. Old moved that the next meeting of the Board be held in Lynchburg, December 19, 20, 21, 22, 1911. Adopted.

Board adjourned for the day.

The Board met at Medical College of Virginia, June 21st, 10 A. M. Present: Drs. R. W. Martin, R. S. Martin, Brady, Corey, Boyd, Rennie, Warinner, James, Holladay, Williams, and Wright.

The Committee on Reciprocity reported certificates granted, as follows:

No. 17—Seeking reciprocity with North Carolina.

No. 60—Seeking reciprocity with North Carolina.

No. 91—Seeking reciprocity with Maryland.

No. 140—Seeking reciprocity with District of Columbia.

No. 135—Seeking reciprocity with North Carolina.

No. 89—Seeking reciprocity with District of Columbia.

No. 149—Seeking reciprocity with District of Columbia.

Adopted.

R. B. JAMES,
E. C. WILLIAMS,
J. E. WARINNER,

Committee.

The auditing committee reported having examined the books of the Secretary-Treasurer and found them correct.

Drs. Barney and Warinner offered the following resolution, which was adopted.

Resolved, That the State Board of Medical Examiners, now in session, desire to express to the faculty of the Medical College of Virginia their appreciation of the use of said building for the purpose of holding their session. This courtesy is received with pleasure and noted with a feeling of the cordial relations which should co-operate in elevating the standards of medical education and licensure. The Secretary is directed to transmit a copy of this resolution to the clerk of the faculty.

Board met at Medical College of Virginia, June 22, 1911. Present: Drs. R. W. Martin, R. S. Martin, Boyd, Glasgow, Old, Williams, Holladay, Dew, Brady, Corey, Warinner.

Dr. Old offered the following resolution, which was adopted:

Resolved, That a Legislative Committee be appointed, to report at the next meeting of the Board, the necessary changes to be made in the State law regarding the practice of medicine.

The following members were named as the Legislative Committee: Drs. Old, Warinner and Corey.

Dr. Brady moved that the By-Laws be suspended in the case of Dr. C. S. Kinzer, of Sutherland, Tenn., and that he be granted a temporary permit before the expiration of the sixty day prerequisite. Seconded by Dr. Glasgow. Adopted.

Dr. Brady resigned as member of the Executive Committee, and Dr. J. E. Warinner was appointed in his place.

Dr. Old moved that each Examiner send his questions two weeks before the examination, to the Chairman of the Question Committee, to be passed on by the said Committee, and after being returned to the Examiner, the latter shall bring same printed to the meeting of the Board.

Adopted.

R. W. MARTIN, *President*.
R. S. MARTIN, *Secretary-Treasurer*.

QUESTIONS FOR EXAMINATION OF APPLICANTS FOR CERTIFICATES OF LICENSE TO PRACTICE IN VIRGINIA, JUNE, 1911.

Pathology and Bacteriology.

DR. LEWIS HOLLADAY, EXAMINER.

1. Describe the pathology of the blood vascular changes in acute inflammation. Mention the cardinal signs of inflammation, and state to what each is due.
2. Define (a) Thrombosis; (b) Embolism; (c) Infarct; (d) Fatty degeneration; (e) Edema; Distinguish between fatty infiltration and fatty metamorphosis; ascites and anasarca.
3. What do you understand by septic intoxication? Explain the difference between puerperal septicemia and sapremia.
4. If, upon examining a specimen of blood, you found the presence, in considerable numbers, of large mononuclear leucocytes containing neutrophile granules, of what disease would you consider it pathognomonic? Describe the blood picture in secondary anæmia.
5. Give the pathological changes occurring in lung tissue in the various stages of lobar pneumonia.
6. Name the tumors having epithelium as a physiological prototype; and state which are benign and which are malignant.
7. State the essential difference between plants and animals. Define (a) metaphyta; (b) protophyta. To which group do the bacteria belong?
8. Distinguish between (a) ptomaines and leucomaines; (b) toxins and toxalbumins; (c) an antiseptic and a disinfectant.
9. Define (a) coccus; (b) bacillus; (c) spirillum; (d) an obligate parasite; (e) a facultative saprophyte. Name one organism strictly anaerobic.
10. Define immunity. How is immunity from the pathogenic action of bacteria often acquired?

Medical Jurisprudence.

DR. P. W. BOYD, Examiner.

1. Give symptoms of suffocation caused by carbon monoxide gas. (CO).
2. Give symptoms, acute and chronic, in death caused by starvation.
3. Define mania and paranoia.
4. What is the distinction between ante-mortem and post-mortem incised wounds?
5. What does the term lucid interval signify in a legal sense?

Hygiene and Preventive Medicine.

DR. H. W. DEW, Examiner.

1. How is active immunity produced? Passive immunity? Give an example of each.
2. In country districts and temporary encampments, how would you dispose of the excreta? State reason for your methods.
3. What is meant by the direct system of heating? By the indirect? Which gives the best ventilation?
4. Give a cheap and efficient method of disinfection for schools and public buildings, and formula for disinfectants used.
5. What proofs have you that malaria is transmitted by the mosquito? Which of the different methods would you employ to eliminate the disease?

Materia Medica.

DR. ROBT. GLASGOW, Examiner.

1. What are diaphoretics, and what their principal use in medicine?
2. State sources from which caffeine is obtained, and give dose of the citrate.
3. Name the preparations of digitalis, giving the dose of each.
4. What is adrenalin, and what its principal use?
5. Give the two general classifications of emetics, with an example of each class.
6. What are astringents? Name the vegetable astringents and state to what they owe their virtue.
7. What is phenol, the source from which it is derived, and its effects locally? (II). Internally?

Therapeutics and Toxicology.

DR. J. E. WARRINER, Examiner.

9

Therapeutics.

1. Why are antagonistic remedies sometimes combined; and give two examples?
2. Write two prescriptions having in combination the best cholagogues, in proper adult doses.
3. Give methods and name drugs for producing diaphoresis.
4. Name with doses the four most active anthelmintic drugs for the expulsion of round worm, thread worm, tape worm and hook worm.
5. Compare the action of digitalis, strychnine and nitroglycerine on the heart.

Toxicology.

1. Name four of the most prominent poisons, and give their respective antidotes and antagonists.
2. In case of suspected poisoning, state how and what organs should be preserved for examination.
3. What is ptomaine poisoning, and give symptoms and treatment?

Histology and Anatomy.

O. C. WRIGHT, Examiner.

Histology.

1. Give the structure of the kidney.
2. Describe bone tissue.
3. What is the thyroid body?
4. Name the morphological constituents of the blood and describe each.

Anatomy.

1. Describe the tibia.
2. Give the origin and insertion of adductor longus and adductor brevis muscles.
3. Describe the biceps muscle and give its function.
4. Describe the peritoneum.
5. Name the branches of celiac axis and give their distribution.
6. Give contents of popliteal space.

Physiology and Embryology.

DR. R. B. JAMES, Examiner.

Physiology.

1. What is meant by digestion? By metabolism?
2. Mention the digestive fluids and their sources.
3. Give function of each digestive fluid.
4. In what portions of the alimentary canal does absorption of the digested foods take place?
5. Describe the blood supply of the heart.
6. Describe sounds heard in normal heart. What causes these sounds?
7. What effects does stimulating the vagus have on the heart?
8. What is meant by a nerve center?
9. What assists the heart in keeping up the circulation of blood in the veins?
10. What is the sympathetic nervous system?

Embryology.

1. What part of an embryo first takes on a definite form?
2. What bodies form the ovaries and testes? What relation do they bear to the kidneys in the embryo?

Chemistry.

DR. J. N. BARNEY, Examiner.

1. Name a chemical test for blood.
2. Name a chemical test for formaldehyde in milk.
3. How could you distinguish between phosphates and urates in urine?
4. Name four fats and tell where each is found.
5. Distinguish chemically between albumin and peptones.
6. What is salol chemically?
7. Give preparation, properties, and uses of NH_3 .
8. What salts would aid in classifying: (I). Aperient springs? (II). Saline springs? (III). Bitter springs? (IV). Chalybeate springs? (V). Effervescent springs?
9. $Ca(OH)_2 + CO_2 = ?$
10. How could you detect H_2SO_4 in vinegar?
11. Give atomic weight of three metals and three non-metals.
12. Define: (I) Paris green. (II) NH_4Cl . (III) $CuSO_4$. (IV) Methane. (V) Saccharin. (VI) Glonoin.

Theory and Practice of Medicine.

DRS. JNO. G. RENNIE AND E. C. WILLIAMS, Examiners.

1. Give clinical symptoms of typical typhoid fever.
2. Give treatment of acute catarrhal dysentery.
3. Give diagnosis of æstivo-autumnal fever.
4. Give treatment of acute bronchial asthma.
5. Give the blood changes in pernicious anemia.
6. Give physical signs of aortic incompetency.
7. Define (a) hyperemia; (b) elephantiasis; (c) leukemia; (d) purpura hemorrhagica; (e) thyroiditis.
8. Give treatment of chronic constipation.
9. Give pathology of chronic interstitial nephritis.
10. Give management of case of delirium tremens.

Obstetrics and Pediatrics.

DR. HERRERT OLD, Examiner.

1. (a) Name the membranes that surround the fetus at term.
(b) Describe the amnion.
2. Differentiate between placenta prævia, accidental hemorrhage and rupture of the uterus during labor.
3. Diagnosis and management in detail of the second stage of normal labor.
4. Prognosis and treatment of asphyxia neonatorum (a) blue, (b) white.
5. Contrast the advantages and disadvantages of Cæsarian section and premature interruption of pregnancy.
6. Mention the bony landmarks between which the various diameters by external pelvimetry are measured; also tell how you determine the true conjugate diameter.
7. Differentiate between acute intussusception and acute ileo-colitis.
8. Differentiate between lobar pneumonia and acute appendicitis in children.
9. How would you determine whether curds in an infant's stool were due to fat or proteid?
10. Differentiate between pemphigus neonatorum and hereditary syphilis in an infant.

Materia Medica and Toxicology.

DR. HARRY S. CORRY, Examiner.

Therapeutics.

1. What symptoms are the most important in making a prescription?

2. Name the three cardinal points of every symptom.
3. Discuss a remedy where there is a lack of reaction.
4. Discuss a remedy where there is a lack of mental and physical development.
5. What is a nosode, and name one?
6. Throat symptoms of lachesis, apis and phyto-lacca?
7. Respiratory symptoms of bryonia, phos. and ant. tart?
8. Mental symptoms of cannabis indica and ignatia?
9. Compare spigelia and cactus grand. in heart affections.
10. Differentiate stool of veratrum alb., bryonia, and mag. carb.
11. Name two remedies having involuntary urination.
12. Name three remedies acting on digestive tract, and differentiate.
13. Differentiate three remedies having early morning diarrhoea.
14. Symptoms and treatment of an overdose of chloral hydrate.
15. What drug poison would you suspect in patient having great muscular prostration, double vision and ptosis.

Surgery and Gynecology.

DR. E. T. BRADY, Examiner.

Surgery.

1. How would you treat a corneal ulcer?
2. State chief dangers in administration of (a) chloroform; (b) ether. How best avoided, and how counteracted if met with.
3. Give methods of inducing local anæsthesia (how and what used, and strength of solutions, if used).
4. What are causes, symptoms and management of acquired pes planus (flat foot).
5. Give symptoms of tuberculous coxitis and state anatomical points for measurements to ascertain deformity.
6. How would you replace and fix a fracture of the clavicle?
7. How recognize and treat a dislocation of semi-lunar cartilages of knee-joint?
8. Give symptoms and treatment of prostatic hypertrophy.
9. What constitutes a leucocytosis and from a surgical standpoint what is its diagnostic value?
10. How would you remove impacted wax from the ear?

Gynecology.

11. What are the most common benign growths found within the uterine cavity? How treated?
12. Give causes and treatment of pruritus vulvæ.

Alphabetically Arranged List of Applicants for License to Practice Medicine, Surgery, etc., Who Passed Satisfactory Examinations Before the Medical Examining Board of Virginia During Its Session, June 20-23, 1911, Richmond, Va.

- Alexander, Max John, Richmond, Va., Medical College of Virginia, 1910.
 Broadus, T. N., Richmond, Va., Medical College of Virginia, 1911.
 Brinkley, A. S., Cypress Chapel, Va., Medical College of Virginia, 1911.
 Beckler, H. S., Richmond, Va., American School Osteopathy, 1911.
 Beckner, W. F., Dante, Va., Maryland Medical College, 1911.

- Booth, J. T., Marine Hospital, N. Y., University College Medicine, 1911.
- Burke, Elihu D., Hertford, N. C., Meharry Medical College, 1911.
- Brewster, G. W., Canebake, W. Va., Louisville Medical College, 1909.
- Brammer, F. P., Floyd, Va., Medical College Virginia, 1911.
- Blanchard, T. W., Gliden, N. C., Medical College Virginia, 1911.
- Blackwell, Jas. H., Richmond, Va., Howard University, 1911.
- Brunet, W. M., Petersburg, Va., University College Medicine, 1911.
- Baum, E. G., Washington, D. C., George Washington University, 1911.
- Brydon, Mary Evelyn, Danville, Va., Woman's Medical College, Philadelphia, 1911.
- Benton, Geo. H., Mine Run, Va., Metropolitan Medical College, 1899.
- Barrow, A. L., Abingdon, Va., University of Maryland, 1903.
- Crowgey, Wm. B., Wytheville, Va., Medical College Virginia, 1911.
- Cherry, C. H., Lancaster, S. C., Medical College Virginia, 1911.
- Cannady, R. G., Richmond, Va., Medical College Virginia, 1911.
- Corbin, P. C., Atlantic City, N. J., Leonard Medical College, 1911.
- Cleavis, Sam W., Somerset, Va., Leonard Medical College, 1911.
- Claggett, Jos. E., Dumfries, Va., Maryland Medical College, 1910.
- Calfe, W. R., Allisonia, Va., Medical College Virginia, 1911.
- Cabaniss, W. H., Maxeys, Ga., University of Virginia, 1911.
- Cornett, H. V., Spring Valley, Va., University of Virginia, 1911.
- Campbell, Clarence, Enfield, Va., Medical College Virginia, 1911.
- Cummings, Hugh S., Fort Monroe, Va., University of Virginia, 1884.
- Dillard, F. M., Chilesburg, Va., University College Medicine, 1911.
- Daisy, W. O., Dante, Va., Maryland Medical College, 1911.
- Dixon, Joseph, Rapidan, Va., Medical College Virginia, 1894.
- Davis, H. E., Beaver Dam, Va., Medical College Virginia, 1911.
- Dufour, Clarence R., Washington, D. C., Georgetown Medical School, 1890.
- Davis, Carrie Chase, Fairfax, Va., Howard University, 1897.
- Delaney, L. T., Raleigh, N. C., Leonard Medical College, 1911.
- Edmunds, M. C., Richmond, Va., Medical College Virginia, 1911.
- Ellen, C. J., Battleboro, N. C., University College Medicine, 1911.
- Elliot, H. T., Forest Depot, Va., University of Louisville, 1911.
- Eppard, Geo. I., Washington, D. C., George Washington University, 1911.
- Francis, Hamilton G., Norfolk, Va., Meharry Medical College, 1911.
- Feddeman, C. E., Hallwood, Va., Jefferson Medical College, 1911.
- Gayle, E. M., Portsmouth, Va., University of Virginia, 1902.
- Grove, C. C., Salem, Va., University College Medicine, 1911.
- Good, Robt. R., Richmond, Va., University College Medicine, 1911.
- Graves, A. W., Wolfstown, Va., Medical College Virginia, 1910.
- Gunion, John P., Washington, D. C., Columbia University, 1899.
- Hall, E. G., Coates Store, Va., University College Medicine, 1911.
- Hulcher, Julius J., Richmond, Va., University College Medicine, 1911.
- Harris, Frank N., Lynch Station, Va., Meharry Medical College, 1911.
- Haynes, I. J., Richmond, Va., University of Tennessee, 1891.
- Houser, A. A., Rocky Point, Va., Medical College Virginia, 1911.
- Herring, A. L., Richmond, Va., University College Medicine, 1910.
- Hannon, L. L., La Plata, Md., Columbian University, 1888.
- Hankins, G. G., Toano, Va., Medical College Virginia, 1911.
- Jackson, Isaiah A., Somerset, Va., Leonard Medical College, 1911.
- Johnson, A. C., Richmond, Va., Leonard Medical College, 1910.
- Jarman, F. G., Elkton, Va. University College Medicine, 1911.
- Kable, J. L., Staunton, Va., University of Virginia, 1911.
- King, A. T., Richmond, Va., University of Virginia, 1911.
- Knewstep, Wm. Edward, Hampton, Va., Medical College Virginia, 1910.
- Levy, Walter M., Petersburg, Va., Howard University, 1911.
- Lawson, W. E., Hampton, Va., University College Medicine, 1911.
- Love, Hattie Frank, Sweetwater, Tenn., Woman's Medical College, Philadelphia, 1911.
- McCorkle, Geo. E., Keysville, Va., Rush Medical College, 1883.
- McCoy, L. C., Hagerstown, Md., American School Osteopathy, 1911.
- Munt, H. F., Petersburg, Va., Medical College Virginia, 1911.
- Mason, Alvis S., Farmville, Va., Howard University, 1911.
- McClintock, Chas. T., Richmond, Va., University of Michigan, 1894.
- Nelson, Eugene C., Olweim, Iowa, Meharry Medical College, 1911.
- Nance, G. E., Roxbury, Va., Medical College Virginia, 1911.
- Porter, W. B., Richmond, Va., University College Medicine, 1911.
- Pogue, G. L. A., Fincastle, Va., Leonard Medical College, 1911.
- Ratliff, H. M., Leesburg, Va., Medical College Virginia, 1911.
- Rinker, F. C., Upperville, Va., University of Virginia, 1911.
- Rawls, J. C., Crystal River, Fla., University of Maryland, 1909.
- Raby, J. G., Ahsokie, N. C., University College Medicine, 1911.
- Roberts, Jas. H., Culpeper, Va., Howard University, 1910.
- Ricker, Chas. D., Morrisville, Va., Maryland Medical College, 1902.
- Richardson, M. L., Norfolk, Va., Philadelphia College Infirmary, Osteopathy, 1911.
- Smith, H. C., Richmond, Va., Medical College Virginia, 1911.
- Simmerman, J. W., Speedwell, Va., Maryland Medical College, 1911.

Smart, F. P., University Virginia, University of Virginia, 1911.
 Stoutamire, F. A., Salem, Va., University College of Medicine, 1911.
 Sapp, Jas. L. Jamestown, N. C., Meharry Medical College, 1911.
 Strubinsky, Joseph, Norfolk, Va., Medical College Virginia, 1911.
 Scott, D. P., Monroe, Va., Medical College Virginia, 1911.
 Styres, R. John, Richmond, Va., University College Medicine, 1911.
 Snead, W. S., Buckner, Va., Medical College Virginia, 1911.
 Schools, P. E., Huddleston, Va., University College Medicine, 1911.
 Switzer, Howard, Richmond, Va., Hospital Medical College, Louisville, 1884.
 Tyree, A. D., Monroe, Va., Medical College Virginia, 1911.
 Tarter, H. G., Richmond, Va., Medical College Virginia, 1911.

Talbott, E. B., Richmond, Va., Medical College Virginia, 1911.
 Triplett, W. H., Richmond, Va., Baltimore Medical College, 1911.
 Trice, E. T., Richmond, Va., University College Medicine, 1911.
 Taber, C. W., Richmond, Va., Hahnemann Medical College, 1911.
 Vaiden, A. S., Doe Hill, Va., University of Virginia, 1910.
 Winfield, A. L., Richmond, Va., Medical College Virginia, 1911.
 Watts, R. E., Richmond, Va., Medical College Virginia, 1911.
 Whitlock, O. H., Tobaccoville, Va., University College Medicine, 1911.
 Walker, Chas. M., Portsmouth, Va., Leonard Medical College, 1911.
 Williams, Tom A., Washington, D. C., Edinburgh University, 1896.
 Young, E. W., Disputanta, Va., Baltimore Medical College, 1911.

INSTITUTIONS REPRESENTED BY APPLICANTS
 WHO CAME BEFORE THE
 MEDICAL EXAMINING BOARD OF VIRGINIA
 SUMMER SESSION, AT RICHMOND, VA.,
 JUNE 20-23, 1911.

	Total Number of Applicants from each College.	Total Number of Applicants Licensed from each College.	Total Number of Applicants Rejected from each College.	Partial Examina- tion.	Incomplete or Withdrawn.
University College of Medicine	18	18			
Medical College of Virginia	31	29	1		1
Leonard Medical College	12	8	4		
University of Virginia	10	9	1		
American School of Osteopathy	4	2	2		
Lincoln Memorial Hospital	1				1
University of Maryland	3	2	1		
Hahnemann Medical College, Philadelphia	3	1	2		
Maryland Medical College	11	5	5		1
Meharry Medical College	7	5	2		
Baltimore Medical College	3	2	1		
University of Tennessee	1	1			
University of West Tennessee	1		1		
Howard University	6	5	1		
University of South	2		2		
Louisville Medical College	1	1			
Chattanooga Medical College	1		1		
Edinburgh University, Scotland	1	1			
Philadelphia College, Infirmary of Osteopathy	1	1			
Jefferson Medical College	1	1			
Rush Medical College	1	1			
University of Louisville	1	1			
Georgetown Medical School	1	1			
Columbian University	2	2			
George Washington University	2	2			
Woman's Medical College, Pennsylvania	2	2			
Metropolitan Medical College	1	1			
Hospital Medical College	1	1			
University of Michigan	1	1			
Non-Graduates	32			32	
Totals	162	103	24	32	3

Book Notices.

Manual of Diseases of Infants and Children. By JOHN RUHRAH, M. D., Clinical Professor Diseases of Children, College of Physicians and Surgeons, Baltimore. Third Revised Edition. 12mo. 534 pages. Illustrated. Philadelphia and London. W. B. Saunders Company. 1911. Flexible leather, \$2.50 net.

Dr. Ruhrah has seen fit, in issuing this third edition, to largely re-write and enlarge many articles in his manual on diseases of children, though his original aim to keep the book a small one, easy for rapid reference either for the practicing physician or student, is adhered

to. The sections on examination of sick children, food intoxications, bronchopneumonia, examination of the heart and nervous systems, etc., have undergone certain changes, and a table showing the doses of the most useful drugs for children at various ages, as also other valuable matter, has been added. The author has measured his task well, and he presents a useful volume within the limits prescribed.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M. D., Professor of

Therapeutics and Materia Medica. Jefferson Medical College, Philadelphia; assisted by LEIGHTON F. APPLEMAN, M. D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia. 1911. Volume XIII, Nos. 1, 2 and 3. 8vo. Lea and Febiger, Philadelphia and New York. Paper, \$6 per annum.

The *Progressive Medicine* series is appropriately named, since it covers quite fully, in the several quarterly volumes, the progress of medicine in its most important phases, for the year preceding publication. The series is so well and favorably known, that it seems unnecessary to say more than to state—Number 1 discusses surgery of the head, neck, and thorax; infectious diseases, including acute rheumatism, croupous pneumonia, and influenza; diseases of children; rhinology, laryngology and otology. Number 2 discusses hernia; surgery of the abdomen exclusive of hernia; gynecology; diseases of the blood; diathetic and metabolic diseases; diseases of the spleen, thyroid gland, nutrition and lymphatic system; and ophthalmology. Number 3 deals with the recent advances in diseases of the thorax and its viscera, including the heart, lungs and blood-vessels; dermatology and syphilis; obstetrics; and diseases of the nervous system.

Each "quarterly" contains between 300 and 400 pages. It would seem well for books so valuable to be bound more substantially than in paper.

Text-Book of Medical Diagnosis. By JAMES M. ANDERS, M. D., Professor Theory and Practice of Medicine and Clinical Medicine, and L. NAPOLEON BOSTON, M. D., Adjunct Professor Medicine, Medico-Chirurgical College, Philadelphia. 8vo. 1,195 pages, with 443 illustrations, 17 in colors. Philadelphia and London. W. B. Saunders Company. 1911. Cloth, \$6 net. Half Morocco, \$7.50 net.

While there are many books printed which treat of Physical Diagnosis and Laboratory Diagnosis ranging all the way from reference or hand-books to expansive treatises on these subjects, the volume before us is the first *successful* attempt to combine in one book the essentials of the two methods. The student is introduced to the subject by a pathologic definition, then physical signs, laboratory diagnosis, summary of diagnosis and differential diagnosis. Under these clearly printed heads any reference can be easily found. The type is clear and distinct, the cuts, photogravures, moving pictures and diagrams are for the

most part new and unique in illustrating the desired points. The book is full of interest and instruction. We commend it.

M. D. H., JR.

Diagnostic and Therapeutic Technic. By ALBERT S. MORROW, M. D., Adjunct Professor of Surgery, New York Polyclinic. 8vo. 850 pages, with 815 drawings, mostly original. Philadelphia and London. W. B. Saunders Company. 1911. Cloth, \$5 net.

This book is somewhat unique in that it has grouped under the same cover the practical methods employed in both diagnosis and treatment. The manner of doing a thing is discussed, each procedure being given in detail so that none of the minor points are left to the reader's imagination. Some of the subjects treated belong essentially to the domain of the specialist, but the majority are of the every-day sort—many that are picked up in practice after leaving college—that the general practitioner should have at his finger tips. The volume begins with a discussion of anesthetics—general and local—then takes up sphygmomanometry, transfusion of blood, infusions of physiological salt solutions, hypodermic and intramuscular injection of drugs, administration of antitoxin, vaccination, acupuncture, venesection, scarification, subcutaneous drainage for edema, cupping, leeching, etc., Bier's hyperemic treatment, collection and preservation of pathological specimens, exploratory punctures, aspirations, conditions relating to the respiratory and digestive tracts, genito-urinary troubles—including the female generative organs, etc. About the only thing we fail to find mentioned that might have been noticed in a book of this kind is a discussion of the use of stupes, plasters, and the like, but the book covers the ground so carefully in other respects that those who inspect the volume will find it hard to resist the temptation to have it on their shelves for ready use.

No Tuberculosis at National Soldiers' Home, Va.

Mountain air being deemed more beneficial for those suffering from tuberculosis than salt water air, all inmates of the National Soldiers' Home, Va., suffering with any form of lung trouble, have been sent to the Mountain Soldiers' Home, located at Johnson City, Tenn.

Editorial.

Non-Union of Fractures.

Bones belong to the class of connective tissue which is a lower type of tissue. Following the general biological law that a simple tissue repairs more readily than a more highly differentiated tissue, we would naturally expect repair of bone to be more nearly perfect than repair of epithelial tissue, for instance. This observation is borne out in practice in the vast majority of cases, as most fractures of bones when properly set repair perfectly, so that an examination made after repair has been completed can hardly demonstrate the original site of fracture. There is an apparent contradiction to this law when we see a fracture of a long bone in a healthy individual with no attempt at bony union. This exception, however, is more apparent than real. The connective tissue frame work and vascularization has been completed, and if there were a deposit of bone salts the repair would be satisfactory. The only step lacking in such instances—but an essential step—is the deposit of lime salts within this new tissue. If a deposit of lime salts takes place firm union results. Constitutional treatment, such as anti-syphilitic remedies, where indicated, and the administration of hypophosphites of lime has been a classical practice. Recently, the administration of thyroid extract has come into vogue, but its usefulness is doubtful. Of course, general hygienic measures should be adopted. Locally, the chief cause of failure in operations for non-union is the fact that the bones are fitted together too accurately. If a patient has the normal ability to deposit lime salts in bone tissue, there is no objection to accurate coaptation, but in non-union this very feature is lacking and is the cause of the failure. Consequently, while the bone should be set in the proper axis, the ends instead of being sawed smoothly should be roughened. Often the ends are filled solid with bone. This prevents the normal amount of nutrition from reaching the site of fracture by means of the medullary cavity. The solid ends of the bone should be drilled out until the medullary cavity is reached, the ends should be roughened somewhat, and fixed together with a plate. An ivory peg may be inserted into the drilled out medullary cavity. Dr. Chas. Mayo

has particularly called attention to this feature. These procedures permit an abundance of nutrition which comes, not only from the medullary cavity, but, on account of the blood clots which accumulate about the roughened ends of the bone, the hyperemia and local leukocytosis are augmented. By following out these principles of pathology, instead of attempting to make a nice mechanical union, practically all cases of non-union should be cured.

Medical Society of Virginia.

Preliminary announcements of the forty-second annual session of the Medical Society of Virginia were issued a couple of weeks or more ago, with request to have titles of papers to be presented the Society in the hands of the Secretary, Dr. Paulus A. Irving, Farmville, Va., by the 15th of September, at latest.

The meeting will convene at the Jefferson Hotel, Richmond, Va., at 8 P. M., Tuesday, October 24, 1911, and will be in session through the 27th. Dr. J. Fulmer Bright, chairman, and the local Committee of Arrangements will endeavor to furnish entertainment for those in attendance, and the usual scientific program promises many excellent papers. Typhoid fever is the subject for general discussion, with Drs. Ennion G. Williams, Richmond; J. J. McCormick, Norfolk, and Geo. K. Vanderslice, Phoebus, as leaders.

Drs. Fenton B. Turck, Chicago, J. J. Kindred, New York, and Thos. B. Holloway, Philadelphia, have accepted invitations to attend the meeting and read papers.

Officers of the Society are president, Dr. O. C. Wright, Jarratt; vice-presidents, Drs. J. T. Buxton, Newport News, R. M. Wiley, Salem. McGuire Newton, Richmond; secretary, Dr. Paulus A. Irving, Farmville; treasurer, Dr. Greer Baughman, Richmond.

With the advantages of clinics and amusements offered in the larger cities, it is hoped the 1911 meeting will be a banner one in point of attendance.

Conservation of Health.

One of the large insurance companies of this country has recently established a "Conservation Department," with a view to rendering an additional service to its policyholders. The reduction in number of premature and unnecessary deaths, by adherence to the laws of *preventive medicine*, will ultimately

bring about a reduction in the cost of insurance, which should benefit the insured and insurer alike.

In its endeavor to conserve human life, this company will aim to impress upon its medical representatives and members that the "family physician" should be consulted frequently for health examinations and advice in matters of health, with a view of detecting diseases in their incipency, resulting in their improvement or possible cure. Its Conservation Commissioner will, as far as possible, co-operate with public health departments in their war against disease through preventive medicine.

With the adoption of a similar department by all insurance companies, results should soon be obtained for which health officials have long been striving. True, such a state would make an inroad into the income of the general practitioner, but why should he object, when, in his position as philanthropist, he is working not for his own but his fellowman's good? In spite of the fate to be meted out to the doctor, such a project as the above should meet with the hearty endorsement of the entire medical profession.

American Roentgen Ray Society.

From literature sent out by officials of the Society, the meeting to be held in Richmond, Va., September 20-23, 1911, promises to be largely attended, and will have perhaps the most interesting program of any of the annual sessions since its foundation some twelve years ago.

Each year adds much that is new in this branch of medicine and surgery, and, as the possibilities of the X-ray are unfolded, new and more potent apparatus is devised to meet the needs. A very complete exhibit of all the latest and best that the manufacturers can furnish will be given in the exhibit rooms of the Jefferson Hotel. Thus, each doctor will be enabled to choose for himself the outfit that best suits him, after a side-by-side comparison and competitive demonstration of the possibilities of the different machines.

The Committee of Arrangements, with the co-operation of the local profession and City Council, is providing varied and extensive entertainment for the visitors and their ladies, and it is hoped that the Richmond meeting, the first held in the South, will be as pleasant

and profitable as those which have been enjoyed elsewhere.

The Public Drinking Cup Abolished.

The State of Illinois enacted a law which went into force the first of July to abolish the use of the public drinking cup, and a similar law becomes effective in New York City October first. As what has been done is an evidence of what can and may be done elsewhere, there is every reason to believe this law will in the near future become effective throughout our entire country.

If sanitary cups are not furnished, individual ones, which serve the purpose well, may be improvised from a small square of clean white paper. A recent Bulletin issued by the Department of Health of Chicago gave directions for making such a paper cup, and they are so simple, that any child in the Kindergarten could easily be taught to make its own cup.

The Association of Military Surgeons of the United States

Will meet in Milwaukee, Wis., September 26-29, under the presidency of Brigadier-General George H. Torney, Surgeon-General, U. S. A. Major Charles Lynch, U. S. A., and Major Herbert A. Arnold, National Guard of Pa., will be in their accustomed places as secretary and treasurer, respectively.

All meetings will be held at the Pfister Hotel, which will be headquarters of the Association for the meeting. The attendance promises to be large, and several of the foreign governments invited to send delegates have already accepted. An elaborate social program is being planned, which will include a visit to the quarters of the cavalry and artillery of the Wisconsin National Guard.

The American Association of Clinical Research

Will hold its third annual meeting September 27 and 28, 1911, in the Lecture Hall of the Boston Society of Natural History, Boston, Mass., Dr. Alvin Roy Peebles, of Boulder, Col., presiding. A number of papers will be read by representative doctors from all parts of the United States. A dinner will be given the members of the Association on the evening of the last day.

Application blanks for membership may

be obtained from the secretary, Dr. Jas. Krauss, 419 Boylston St., Boston, Mass.

Dr. George Tucker Harrison,

Who has for many years made his home in New York, will move to Charlottesville, Va., the first of October, and will limit his practice to office, consultation with other physicians, and operative work.

Being a native and former resident of Virginia, Dr. Harrison has many friends and admirers here who will welcome his return. His popularity in this State is attested by the fact that he has for nearly thirty years been an honorary member of the Medical Society of Virginia, and his visits on the occasions of these meetings are always anticipated with pleasure.

Dr. Mark W. Peyser,

Editor of the Department of Analyses, Selections, etc., for the *Semi-Monthly*, being on his vacation, accounts for the absence of his Department from the present issue.

The United States Civil Service Commission

Announces the need of trained nurses for the Isthmian Canal, Philippine, and Indian Services, and of a male bacteriologist and pathologist for the Philippine Service. Application forms for both positions may be had upon request to the Commission at Washington, D. C., and should be filed with the Commission in their completed form for the former position by September 20, and for the latter position by September 23, 1911.

"Successful Medicine"

Is a journal which will be published bi-monthly, beginning September, 1911, by Dr. Henry R. Harrower, of Chicago, and will alternate in publication with his other bi-monthly, the *American Journal of Physiologic Therapeutics*. *Successful Medicine* will be regular magazine size with a minimum of 48 pages, at 25 cents a year. It is to be "a journal of commercial medicine, devoted solely to that side of practice which directly concerns the dollars and cents," with a view to showing the doctor how to get results "and the money for it."

For Sale---Having decided to specialize on Diseases of Children, I wish a competent man to take my practice in a Virginia town, in the most beautiful portion of the Shenandoah Valley. Address "W. L.," care this *Journal*.

For Sale---A valuable medical library, full set of instruments, operating table, etc. These must be sold at once, to settle the estate of the late Dr. G. M. Nickell. For particulars, write to Mrs. G. M. Nickell, Millboro, Va.

Obituary Record.

Dr. Carroll Moore Baggarly.

It is with deep regret we announce the death of this sterling young physician in this city, September 3, after a short though severe illness from typhoid fever with a superinduced lobar pneumonia.

Born in Washington, Va., March 13, 1873, he graduated with the degree of bachelor of arts, from Randolph-Macon College, Ashland, later studying medicine at the University College of Medicine, Richmond, from which he graduated in 1901. Since that time, he has served variously as instructor in the practice of medicine and associate professor of ophthalmology in the latter institution. In addition to his medical work, he had for a number of years been connected with the teaching staff of the Woman's College as also of Richmond College, and was recently appointed Assistant Medical Inspector in the Public Schools of Richmond. Dr. Baggarly was a Mason, Odd-Fellow, and member of his State and local medical societies. For several years he had been associated with Dr. Joseph A. White in eye, ear, nose and throat practice, and ranked as one of the prominent members of the profession in his specialty in Virginia.

During his sojourn in this city, by his courteous and genial manner, he won for himself many friends and admirers who will feel his death keenly. His aged father and a brother survive him. His body was taken to his native home in Rappahannock County, Virginia, for interment.

THE Virginia Medical Semi-Monthly.

(FORMERLY VIRGINIA MEDICAL MONTHLY.)

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10 Cents a Copy.

Original Communications.

PROLAPSE OF THE UTERUS.*

By CHARLES R. ROBINS, M. D., Richmond, Va.
Professor of Gynecology, Medical College of Virginia;
Gynecologist, Memorial Hospital.

The object of this paper is to present a few points that have impressed me in a rather extensive experience with this condition.

In arriving at a diagnosis it is necessary for the patient to be placed in the position in which the prolapse is most marked. For this reason the examination should be made with the patient either standing or squatting. A few days rest in bed is often sufficient to allow the parts to regain their position and tone to such an extent that the findings will be misleading. For this reason I prefer to make the examination after the patient has taken exercise and before they are put to bed.

While laceration of the perineum is the most important single factor in producing prolapse, it is by no means the sole cause, and prolapse occurs in cases in which the perineum is intact. Relaxation of the uterine ligaments and pelvic connective tissues play an important role.

For practical purposes, we may divide prolapse into two classes. In the first class are those cases in which the perineum is torn and relaxed and with which are associated cystocele and rectocele, while the uterus descends only partly and is restrained by the uterine ligaments and pelvic connective tissue. These cases are most frequently found in younger women.

In the second class are the cases in which the pelvic contents shoot out when the patient stands or defecates and in which there is practically no restraining force. There is usually a laceration of the perineum, but the perineum may be intact. These cases are usually found

in older women about the period of the menopause.

In treating the first class our efforts are directed to the obvious cause of the condition, the injured tissues of the pelvic outlet. Whatever may be necessary is done to the cervix and uterus. For the relief of the cystocele the following technique has given the best results with me. A vertical incision is made on the anterior wall of the vagina, extending from the commencement of the cystocele down to well on the cervix. This is carried down to the cellular tissue between the vagina and bladder. The bladder is then dissected from its attachments to the vagina and cervix and pushed upward. The lower segment of the broad ligament is then caught on either side and sutured in front of the cervix with chromic catgut. Traction on this brings out a strong process of fascia which is sutured under the base of the bladder. The mucous membrane is then closed with catgut. The perineum is repaired as follows: a U-shaped incision is made on the mucocutaneous margin and the vagina elevated from the underlying structures. The attachment of the central tendon of the perineum is preserved. The vaginal mucous membrane is pushed back and the muscle and fascia sutured. Silk worm gut sutures are first introduced under the various structures, which are then accurately coapted with catgut, after which the silk worm gut sutures are tied. We have then to consider the position of the uterus. If it is left in the axis of the vagina there will be a tendency for the prolapse to recur. In order to prevent this it is necessary for the position of anteversion to be maintained. This can be done by either a ventral suspension or any of the ligament operations.

The second class presents a somewhat different aspect. Here the support from above is practically lost, and it is necessary to provide a fixed point. In addition to this we have to

*Read before the Southwest Virginia Medical Society, at Roanoke, Va., June 20-21, 1911.

consider a uterus that on account of the age of the patient is useless and in addition often presents marked gross pathological changes. Nothing is to be gained by its preservation. In such cases an abdominal hysterectomy offers the best field of approach. Either a supravaginal amputation or a total hysterectomy may be performed. In either case the ligaments are fixed to the stump, thus giving the ligamentary support, and then the stump is fixed in the lower end of the abdominal wound with sutures of kangaroo tendon. These pass through the muscles and fascia, but internal to the peritoneal layer. This brings the raw surface of the stump against the muscles and secures firm union, thus giving excellent support to the base of the bladder. The perineum should be repaired in the manner described if any defect is present.

8 West Grace Street.

SYMPTOMS OF EXOPHTHALMIC GOITRE.*

By GEORGE B. LAWSON, M. D., Roanoke, Va.

Jefferson Surgical Hospital.

The term exophthalmic goitre is applied to a disease with classical symptoms of exophthalmos, goitre, tachycardia and tremor. Inasmuch as it has been shown in recent years that the exophthalmos and the thyroid enlargement may be wanting or present only to a slight degree, the term exophthalmic goitre has fallen under criticism and lately we have begun to apply the term hyperthyroidism, or thyreotoxicosis, to this disease, especially to those cases in which the symptoms do not come out well marked. We are able to trace all stages from a normal individual to an individual in which the thyroid gland gives marked evidence of over-activity, so that in some cases one cannot draw the line between the normal and the abnormal. In this paper we shall include all our cases of hyperthyroidism. The disease is sometimes called Parry's disease, Graves' disease, or Basedow's disease, from the names of those men who were associated with the early descriptions of this malady.

In the history of the disease, Sattler gives a reference as far back as 1722. However, the first description of any accuracy was by

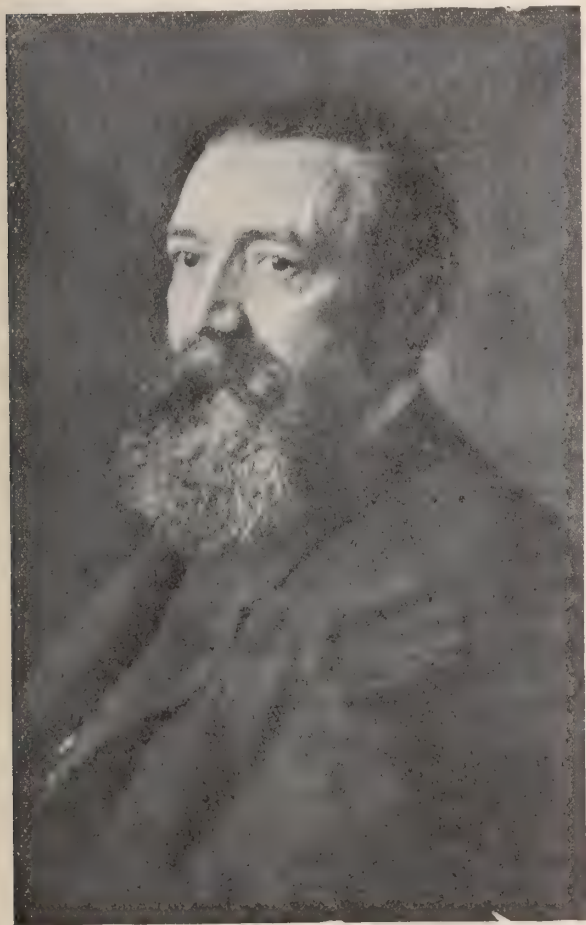
Parry, an Englishman, who, in his medical writings in 1825, under diseases of the heart, described enlargement of the thyroid gland in connection with enlargement or palpitation of the heart. The notes of his first case, which was typical, were made in 1786. Graves, the famous Irish clinician, whose picture appears with this paper, in 1835, was the next to de-



scribe this condition, and the publishing of his textbook in 1843 gave marked prominence to his work. In 1840, Basedow, a German, published a more complete description, giving a detailed account of four cases. About the middle of the nineteenth century, the term exophthalmic goitre began to be applied to this disease, by Trousseau and others. Other authors, from time to time, have brought out other symptoms and signs; thus, the tremor by Basedow, Charcot and Marie, the more ac-

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curate eye symptoms by von Graefe, Stelwag, Moebius and others. Moebius brought out the fact that exophthalmic goitre was due to an over-activity of the thyroid gland. The picture which accompanies this article is said to be a good likeness, and was copied from *Zum Andenken an Paul Julius Möbius* von Dr. Ernst Jentsch.



Many factors seem to play a part in the causation of this disease, such as worry, fright, mental strain, infectious diseases, as tonsillitis scarlet fever and typhoid. Certain patients have a family history of goitre, either simple or exophthalmic. Thus, in one of our cases, a man about 30 years of age, all the female relatives had simple goitre, while he had simple goitre with periodic exacerbation of hyperthyroidism. Women are more inclined to this disease than men; thus, practically all of our cases have been women. Age seems to have quite a marked influence; thus, we see many cases of slight transient hyperthyroidism

in women from 17 to 35, this being the time of greatest menstrual activity. Locality does not seem to play the part that it does in cretinism and the other thyroid maladies. Simple goitres, if allowed to continue, will sometimes have engrafted on them the symptoms of hyperthyroidism, and microscopically show the typical glandular changes of this condition.

The onset of the disease is usually slow, showing at first only one or two of the symptoms, which gradually increase in intensity with the addition of other symptoms. The whole course of the disease may be characterized by periods of exacerbations of symptoms, in between which the patient may show very little that is abnormal. A few cases have been reported, in which death occurred in three or four days after the onset.

The first symptoms that the patient usually notices are a marked general nervousness, apprehension, and restlessness, with palpitation of the heart. The discomfort from the palpitation may be very marked. Tachycardia is an early symptom. The pulse may run from 100 to 150, or even sometimes to 200. Later on, the heart may become dilated with valvular insufficiency. There may be noticeable pulsation of the larger peripheral vessels.

The most noticeable symptom in the advanced cases is the exophthalmos, the eyes have a frightened staring appearance, the eyeballs protruding with widened palpebral aperture. The exophthalmos is one of the least constant symptoms, coming on usually as the last of the cardinal symptoms, and is wanting in perhaps 20 per cent. of the cases. It may occur in one or both eyes, and varies in degree in the different cases. The exophthalmos was thought at one time to be due to the venous pressure behind the eyes caused by obstruction to the veins from the enlarged thyroid.

In addition to the exophthalmos, the other eye signs are the retraction of the upper lid so that the sclera shows between the cornea and the upper lid, the so-called Stelwag's sign; the inability of the lids to follow the eyes, when looking up or down, the von Graefe's sign; and the incoordination of the eyes when looking at an object held close. Moebius's sign. However, patients without any hyperthyroidism may show sometimes

the above eye symptoms. The pupils show no especial changes. There may be excessive tear secretion. In fact, Sattler reports 26 eye symptoms in "Die Basedow'sche Krankheit" and gives references to 2896 articles between 1722 and 1907. Muscular weakness gradually becomes marked, and this is noticed by the patient himself, and is easily shown by testing groups of muscles. The patient may notice great weakness and giving away of the legs in climbing stairs.

A fine tremor develops early in the disease; this is best shown in the fingers and hands when outstretched. The head, arms and even the entire body may show this tremor. This tremor is fine in character, about eight to the second, and is one of flexion rather than one of pronation and supination. It is an early cardinal symptom.

The thyroid may vary in size, sometimes very slightly enlarged, sometimes very much so. The enlargement usually is not as prominent as in some of the simple and cystic goitres. The enlargement may involve only one side, or it may involve both sides with the connecting isthmus. The thyroid may show marked pulsation, and a thrill felt, and with this is heard a loud bruit on auscultation. Sometimes a double murmur is heard.

The gastro-intestinal symptoms, consisting of nausea and vomiting, with a severe diarrhoea, may at times become the most marked features of the case.

With the progress of the disease there is, in most cases, a progressive loss of weight, and frequently there are progressive mental symptoms—even to insanity at times.

The skin shows pigmentation in many cases similar to Addison's disease. There is an increase in the perspiration. With this there is a decreased resistance to the electric current, probably due to the increased moisture.

The blood changes are those of a secondary anemia. Recently Kocher has shown that the percentage of mononuclear leucocytes is greatly increased.

Certain drugs, such as thyroid extract, iodine, iodothylin, and the iodides are shown to increase the symptoms, and in this way serve as diagnostic aid in this malady.

THE PATHOLOGY AND CHEMISTRY OF EXOPHTHALMIC GOITRE.*

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During the past few years the thyroid gland, as with all the ductless glands, has attracted widespread attention, particularly as concerns its hyper-functioning, and the literature is quite voluminous.

The thyroid is a ductless gland, its secretion mainly being taken up by the lymphatics. It is composed of two lateral lobes—one on either side of the larynx, and an isthmus connecting these two. Its average weight is 25 to 30 grams. It is formed embryologically by a fusion of the median and two lateral inversions of the pharyngeal hypoblast—fusion taking place at about the seventh week. At about the eighth week the thyro-glossal duct, which connects the pharynx with the thyroid, becomes obliterated. It may, however, persist as a fibrous cord or as collections of cells, which, being secretory, may produce cysts—thyro-lingual cysts—in the median line between the thyroid and the tongue, or within the substance of the tongue, and these are the "bug bear" of the surgeon. The processus pyramidalis is a worm-like process extending up the front of the trachea from the isthmus.

There are two capsules enclosing the gland; the outer or capsule of Kocher, is a portion of the deep cervical fascia, holding the gland in position by its attachment along the posterior median surface to the trachea, pharynx and esophagus. The inner, or "capsula propria" is a fibrous capsule attached quite firmly by its prolongations or trabeculae into the gland substance to form its stroma or framework. Within this stroma are found the blood vessels, nerves, and lymphatics—the larger lymphatics having valves like the veins. The lymphatics are poorly formed deep down in the gland substance, but perfectly so nearer the surface. They drain to the superior and inferior cervical glands, mostly the former (Adami²⁰). The blood vessels have abundant anastomosis and carry a supply of blood equal to that of one carotid and one vertebral artery, or approximately one-fourth that of the brain (Luska). The nerves which

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accompany the blood vessels, arise from the superior ganglion of the sympathetic and from the superior and inferior laryngeal branches of the pneumogastric.

The follicles are prominent on section, presenting a finely granular appearance—those filled with colloid projecting above the others. The color is yellowish-red in the adult, and reddish-blue in younger people. Between the follicles, especially in the new-born, one finds rests of fetal tissue appearing in strands and small masses. It is from these cells that the so-called fetal adenoma are supposed to arise. (Ochsner & Thompson¹). This is occasionally mistaken by some pathologists for exophthalmic goitre, and may explain why some reported cases have not given the clinical symptoms of this disease as might have been expected from the pathological reports.

"The function of the thyroid is to furnish an internal secretion, which is not only important, but indispensable for the building up and maintenance of the organism. A lack of this material leads to nutritional disturbance (myxœdema or cachexia) and its over-production to nervous phenomena (exophthalmic goitre)." (Ochsner & Thompson¹). It is with this latter that we have to deal.

The parathyroids discovered by Sandström² in 1880, generally four in number, an upper and a lower on either side, are contained in the loose connective tissue of the outer capsule, or Kocher's external capsule, along the inner posterior edge. These bodies were known to exist long before this time, but were mistaken for lymphatic structures. Even Virchow in 1863 considered them to be detached portions of the thyroid gland or lymph-nodes. They are "small reddish-brown bodies from 2—19 mm. in length, from 2—9 mm. in width, and from 1—4 mm. in thickness." (Kocher³). They develop on the dorsal side from the third and fourth dorsal pouch. Their removal is followed by tetany.

It is interesting here to note the experimental work of Silvestri,⁴ who in his experiments on rabbits, dogs and guinea pigs, found that male adults after castration reacted to removal of the thyroid and the parathyroids the same as normal animals. The female adult, however, after castration bore without injury the removal of the thyroid and the parathyroids.

MacCallum and Voeghtlin⁵ have shown that these glands have certainly some control over calcium metabolism; and, clinically, tetany, following their removal or injury at operation, such as disturbance of their blood supply, etc., may be relieved by the administration of soluble calcium salts, such as the calcium lactate or acetate, as well as by the administration of parathyroid extract or desiccated parathyroid glands.

Chemistry.—The epithelial cells of the thyroid take up certain substances from the circulation, and, after altering them in an unknown way, store them in the follicular spaces. These products or specific secretions are later given off into the circulation. In doing this, the cells undergo changes in shape and size—not all alike—and therefore we recognize several kinds. On chemical analysis, nucleins and globulins are obtained—found both in the cells and in the colloid. Most prominent and characteristic is the large amount of iodine, which is proportional to the kind and quantity of colloid, and iodine containing albumen, (iodothyron of Beaumann).

The most generally accepted composition is:

Inorganic, 82—84 per cent.—water, iodine, phosphorus, iron, etc.

Organic, 17—19 per cent.—Nucleo-proteid, thyreoglobulin, albumen, colloid, fatty acids, lactic acid, xanthin, hypoxanthin, inosite, leucin.

According to Oswald⁶, thyreoglobulin is the proteid containing the iodine, whilst nucleo-proteid is free from iodine and has no functional activity. Beebe⁷, however, has never been able to find nucleo-proteid or other proteid, or any of the primary or secondary albumoses free from iodine.

The per cent. of iodine in childhood and old age is much less than that in the adult. The iodine content and the histological structure have been shown to bear a rather close relationship, and to both vary "(1) with the functional state, (2) with locality, and (3) with nutrition." (Kocher³).

The circulation takes up some of the secretion, but in just what condition is not known. The most important, however, from a chemical point of view is taken along with the colloid. This may be concluded from the fact that when iodothyron of the colloid is adminis-

tered, it will take the place of the gland secretion. Thus, the iodine plays a major part by its organic combination in the gland.

The internal secretion of the thyroid exercises some control over metabolism, having a special influence, probably chemical, on the nervous system—especially the vascular nerves, (sympathetic system); next, on the skin and epithelial structures, and, finally, on the osseous system and on the sexual functions. (Kocker³).

In exophthalmic goitre, "the glands may take up an abnormal quantity of iodine, out of all proportion to its size or the amount of colloid it contains, but it may, under certain circumstances, lose the iodine with the same rapidity. It is noteworthy that in thyrotoxicosis the iodine, which is introduced artificially, is excreted in lesser quantity and more slowly in the urine, without the amount of the iodine in the thyroid gland being increased. This is not the case in normal glands, or in ordinary goitre." (Kocker³).

The cause of exophthalmic goitre is still more or less a question of dispute and there are numerous theories concerning same. However, the hypersecretion theory is favored by the majority of authors, among whom may be mentioned Shepherd,⁸ Beebe,⁹ Smauch,¹⁰ Werelius,¹¹ Kocker,³ Mayo,¹² Dock,¹³ and Wilson.¹⁴ Erb,¹⁵ and Dana¹⁶ support the theory of a nervous origin; Billings¹⁷ thinks it impossible to draw the line of demarcation between neurasthenia and exophthalmic goitre; Curschmann¹⁸ thinks it is a secondary neurosis due to chronic auto-intoxication of an increased and disordered thyroid secretion acting upon the sympathetic nervous system.

Hoffman¹⁹ questions an adrenal insufficiency as the causative factor since the internal secretions of the thyroid and of the adrenals oppose one another.

The majority, however, consider the disease as due to a hypersecretion and an increased absorption of the thyroid. As to an altered secretion, opinions are more divergent, and we must await further evidence; so, too, as concerns the cause of the hyperfunctioning of the gland—whether primary in the gland, or due to disease of the sympathetic, central nervous system, or other organs of internal secretion.

That the disease is due to a hypersecretion of the gland or hyperthyroidism, is well sup-

ported by the fact that it may be brought on by injection of thyroid extract, and also that the gland will atrophy after ligature pressure or the disease subsides after partial removal of the gland. Further evidence is Wilson's¹⁴ work, who was able to show in 80 per cent. of his cases a parallel relationship between the increased amount of functioning tissue and absorbable secretion in the thyroid gland, and the degree of severity of the symptoms.

"If we administer to nervous patients affected with goitre iodine preparations in strong doses, we may see most of the symptoms of Graves' disease develop in a short time—I have still more frequently seen the full symptoms of Graves' disease develop after iodine treatment in persons who gave before treatment a history of some signs of hyperthyreosis. Iodine increases the thyroid secretion (Bruns, Baumgarten and DeLigneris), the follicles are filled with colloid and it is by this stimulation of the thyroid function with resulting excess of its secretion that we may produce pathological hyperthyrosis in nervous, goitrous, people by administration of iodine. (Kocker³). In some of these artificial cases, the characteristic blood changes have been shown and the symptoms disappear after excision of the gland. Chemical examination in such glands shows an exceptionally large amount of iodine, amounting to 50 or 60 or more milligrams of pure iodine.

Adami²⁰ summarizes the evidence that the disease is caused by excessive secretion from the gland as follows: "(1) The cure of the disease by partial thyroidectomy; (2) the production of some of the most striking symptoms (tachycardia, tremors, and nervous irritability), by the administration of too large doses of thyroid extract to previously healthy men or animals, (hyperthyroidism); (3) the increased nitrogenous output seen both in exophthalmic goitre and in hyperthyroidism; (4) the histological indications in typical cases of Graves' disease (as shown by Greenfield, and later by Halsted), of hyperactivity of the gland; the cells lining the vesicles are large; there are indications of over-growth in the form of infoldings of the epithelium; the gland is found very vascular; the vesicular contents thin and become fluid."

Enlargements or hypertrophies of the thyroid gland may be divided roughly into four

classes, (1) inflammations—may or may not produce enlargement; (2) tumors; (3) simple goitre; (4) exophthalmic goitre. In exophthalmic goitre we recognize two forms, (1) the diffuse hypertrophy (Adami²⁰)—the disease apparently beginning in a normal gland; (2) local or adenomatous (?) (Adami²⁰) “struma Gravesiana colloides” (Kocker³), in which type the characteristic epithelial changes are found in localized areas or foci, or within individual lobules of the gland.

In the first, there is a symmetrical enlargement, seldom marked—there may be even a decrease in size. The disease appears usually between twenty-fifth and thirty-fifth years, symptoms are pronounced and course rapid—duration seldom more than four years. Histologically there is uniform proliferation of the epithelial cells with papillae formation due to the infolding of the epithelium.

In the second, the pathological changes usually take place in localized area of a simple colloid goitre or some other pathological condition of the gland. The hypertrophy is greater usually, symptoms less pronounced, and duration of the disease is longer. Histologically, the epithelial changes are the same as in the first type, except that they are in localized areas, elsewhere the section showing the associated pathological condition.

According to Kocker,³ “there are five important factors in the pathological diagnosis of functional Basedow’s disease of the thyroid gland: (1) The vascularity, (2) The extent of the histologic changes, (3) the chemism of the gland, (4) the duration of the disease, (5) previous treatment.” “The characteristic histologic changes, which in recent times have been described by so many authors, can be regarded as specific only when the above mentioned factors are taken into account. These changes are irregularity in the arrangement of the alveoli (acini); localized changes in the epithelium; the formation of papillae; increase in size, particularly in the height, of the epithelial cells, which are paler in the central portion and darker in the peripheral part where the large vesicular nucleus is situated. The colloid material in the areas where the epithelial cells are high is retracted and granular; where there is circular hypertrophy of the cells the colloid material is flaky and is often found at the centre.”

Hyperplasia of the alveolar parenchyma is a constant feature—at first or in milder cases, it may be slight, with a small amount of thin colloid secretion, but becomes more prominent later and with a larger quantity of thin secretion. With a further increase of these features, degenerative changes may be noted, until finally we get marked degeneration, thick secretion and exfoliation of the epithelial cells.

Wilson,¹⁴ in his report of 294 cases, classifies the pathological findings very closely with the clinical symptoms. This is well summarized by Ochsner and Thompson,¹ “According as to whether the cases were acute, and mild, moderate or severe, there was a rising increase of functional activity as shown by increased parenchyma and increased absorbable secretion in the thyroid gland. Cases that had been severe, but with remission of symptoms at the time of examination, showed microscopically beginning degeneration. Cases that had been severe, but that had reduced themselves to the residual stage where only heart and nervous symptoms persisted, as a result of the previous intoxication, showed histologically more or less complete degeneration of the thyroid gland.”

Secondary changes occur in other organs, such as myocardial degeneration, weak, flabby, skeletal muscles, disordered nutrition, etc. According to Beebe,⁷ there is no other disease in which there may be so rapid a loss of weight.

Hyperplasia of the cervical and bronchial lymphatic glands and of the intestinal lymphatics and enlargement of the tonsils have been noted in fatal cases. A condition of “status lymphaticus”—hyperplasia of the thymus and lymphatic tissue generally throughout the body and hyperplasia of the heart and of the arterial system—has attracted attention, being found in many cases of unexplainable sudden death. Its cause is not known. Mackenzie²² believes this “status lymphaticus really underlies many cases of exophthalmic goitre” and “which contributes so largely to the immediate risk to life from operation.”

A persistent and enlarged thymus has been found in fatal cases upon whom autopsies have been made—by Beebe⁷ in all of his cases, by Gebele²³ of Munich, in 80 per cent of fatal operative cases coming to autopsy, by Hector

Mackenzie²², in all fatal cases examined by him, by Capelle,²¹ and others; Beebe⁹ finds clinically in 35 per cent. of his cases, evidence of an enlarged thymus. Gebele²³ believes it to be a compensatory hypertrophy—to do the work the diseased thyroid cannot do. Death in such cases he thinks in no way due to the thymus, but to the injury to the heart from toxic action of the thyroid secretion.

"I am inclined to believe that Hansemann is right in considering the enlarged thymus a secondary factor to the hyperthyroidism." An argument in favor of this and "that it is in effect a protective mechanism might be based upon the fact that thymus extracts have been given therapeutically in this disease with apparent benefit in some cases. It has been my observation that those cases which show the enlarged thymus are not so amenable to treatment as the purer type. They have more exacerbations and complications; they do not respond as surely, and it requires more time to treat them successfully." (Beebe.)⁷

Capelle and Boyer²⁴ report one case of exophthalmic goitre with persisting thymus, in which they removed the latter with a great improvement of the symptoms. The exophthalmos, goitre and bulbar symptoms persisted, but in much milder form. The tachycardia disappeared and the blood pressure returned to normal. After three months there was marked improvement, bearing out, they think, the experimental research that a persisting thymus is liable to aggravate the disease by its internal secretion, which acts mainly on the heart.

Crile²⁵ reports the examination of the brain and cord of a patient dying from exophthalmic goitre, upon whom no operation had been done. His report is as follows: "In the cord but slight changes were seen; in the medulla there was considerable chromatolysis; the Nissl granules were in moderately fine division, and the nucleus-plasma relation was changed; in the cerebellum approximately 30 per cent. of the Purkinje cells were seriously altered and many were destroyed; in the cortex there was marked chromatolysis, the nucleus-plasma relation was disturbed and many cells were destroyed."

Kappis²⁶ reports five cases and collects from the literature fifty-four other cases, with more or less severe disturbances of the nuclei of

the medulla. He calls attention to the fact that these symptoms developed after the disease had existed for some time—a point worthy of note—and which he uses in advocating early operation.

"A sequel to exophthalmic goitre, which has now been observed in a significant number of cases is myxœdema—occasionally the two conditions seem to be combined; the symptoms of myxœdema supervening, while those of exophthalmic goitre still persist. Sometimes myxœdema follows closely on exophthalmic goitre, but there may be a long interval between the times of onset of the two diseases." Mackenzie.²⁷

NOTE.—Lantern sections of various diseases of the thyroid gland were then shown and differential diagnostic points brought out.

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TREATMENT OF EXOPH THALMIC GOITRE.*

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To correctly reach any conclusion upon which to base the method of permanent relief of any symptom or group of symptoms, it is absolutely essential to ascertain the cause of such condition, and until such cause is known beyond a doubt there will be many theories for the best method of treatment.

There have been few diseases as to the origin of which more theories have been advanced than exophthalmic goitre and Heineck¹ reviews at length six separate theories. Briefly, they are the sympathetic, which attribute all the symptoms to a deranged sympathetic nervous system; the cardiac, holding the tachycardia to be primary and all other symptoms resulting from this condition of the heart; the nervous being based on the fact of a neuropathic family history associated with many cases; the parathyroid and thymus theories are mainly due to the correlation of the ductless glands to each other and the consequent difficulty in ascertaining which gland is primarily affected, and, finally, the thyroid theory, which has been largely substantiated by experimental, clinical and pathological evidence.

Moreover, the majority of medical and surgical men admit the correctness of the theory of Moebius, that the symptoms and results of exophthalmic goitre are due to over activity of the thyroid, but what factor primarily causes such pathological changes in the gland is not yet determined, and as long as this point remains indefinite, just so long will this subject be one for discussion. Eulenburg² considers not only the secretion to be increased in amount, but to be changed in character as well, while others attribute the whole condition to the alteration in composition of the secretion alone. As we do not know what causes this alteration of secretion, the next question naturally arises, what is the best method to adopt until such a cause is known? We believe the removal of a part of the gland is logically the correct and most certain method of giving relief as far as our knowledge

now goes. However, there are other methods of limiting the amount of character of this secretion; such as the pole ligation of Stamm, the ligation of arteries and veins, and the exposure of gland without removal, the employment of electricity, X-ray and radium, in hope of causing a glandular atrophy, and the more dangerous method of injections directly into the gland itself upon the remote hypothesis of creating an atrophy by the destructive action of the drug injected.

Some have approached this problem with an attempt to combat the symptoms by the administration of milk, blood, or sera of animals whose thyroid glands have been removed. Others have employed sera made by injecting animals with gland removed at operations from exophthalmic cases, but recently the normal human thyroid has been employed more.

In addition to this long list there arises what is more especially called medical treatment, which consists mainly of rest and unless the physician is very careful during this long period of resting, there will be many secondary changes in other organs, thereby placing the patient beyond the hope of aid. Like any other open question in our science, there are many doctors who have implicit confidence in as many different drugs; and the long list which has been used in the treatment of this disease stands as a monument to their inefficiency to cure, and to do other than to some extent relieve temporarily the symptoms. Forcheimer advocates the "neutral" hydrobromate of quinine, while Jackson⁴ and Eastman⁵ report numerous cures with this drug. Any failure to cure is attributed to not having the drug "neutral," but this resembles too closely a loop hole in the face of failure. Cramer⁶ advises the use of extract *cannabis indica butyricum*.

In addition to these, there have been used the various iodides, thyroid extract, iodothyroidin, thyroidectin,⁷ belladonna, ergot, strophanthus, digitalis and arsenic—most of which are mentioned by some authors, but discredited by more. Rhodagen, made by drying the proteids precipitated from the milk of thyroidectomized goats—used in Europe, is hard to obtain and no definite cure yet reported.

Various authors mention the employment of different forms of electricity, but do not

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go much further, except Ranier,⁸ who considers the direct current, static wave current, high frequency and Röntgen ray of much value, while Freund⁹ states the tachycardia, exophthalmic and nervous symptoms all greatly improve under the use of the Röntgen ray. It is furthermore stated the X-ray decreases the vascularity and therefore diminishes the amount of hemorrhage during the operation, but in the only case on which we have operated following such treatment, there was more subcutaneous bleeding than usual.

However, some prominent surgeons have employed it to precede operations, but personally we cannot see why this should not add to the mental shock, and have serious doubts as to its value in decreasing the vascularity.

In addition to these reports Cook¹⁰ and Price¹¹ each report a few cases improved while taking X-ray treatment. Like so many other hopes of X-ray in the treatment of disease, its employment here is now rare and its successes still more so. Both electricity and X-ray as well as radium, are supposed to cause a glandular atrophy in some other organs, but the predominance of evidence is against such a change in enlarged thyroid associated with pathological secretion or if an atrophy does occur experience does not show relief of symptoms.

The most dangerous of all forms of treatment is the injection of various drugs into the thyroid creating an irritation and resulting necrosis with the necessary absorption of the products of irritation as well as those of necrosis. It is fortunate this method has practically passed out of existence and the chief advantage of the same to-day is to give, not only the profession, but the laity as well, some basis upon which to form an opinion of the physician employing the same.

Rogers and Beebe¹² have done considerable work with a specific cytolytic serum, which briefly they claim will neutralize the toxins and limit, to a certain extent, the cell formation in the gland. Rogers¹³ results in 480 cases are 15 per cent. cured, 50 per cent. improved, 16 per cent. now showing no subjective signs, 17 per cent. no improvement and 8 per cent. dead from other causes, and this certainly compares favorably with any other reported form of treatment. In addition to this serum there are other sera, but with each there

are too few cases to form any definite conclusion.

An important point in the use of the serum is that brought out by Rosenberger,¹⁴ who strongly advises its employment in preparing patients for operation.

In the report of cases treated with the various sera there is too little comparison between rest with the serum and rest without the serum to be of much value for the basis of final conclusion.

Case.—Hospital No. 1660—Miss W—, referred to Doctor Lawson for injection of Rogers and Beebe's serum. For a period of over five years she had been showing symptoms suggestive of exophthalmic goitre and had had an enlarged thyroid as far back as she could remember. Symptoms became so acute as to prevent her continuing her profession of nursing. After the first two injections of serum she began to rapidly improve and returned to her work. She was perfectly satisfied to continue with the serum, but as soon as she omitted it her attacks would return and continue until she could obtain another injection. Realizing she would sometime be where she could not obtain this serum forced her to a partial thyroidectomy, which has completely relieved her of all her symptoms. This was a case of hyperthyroidism ingrafted upon a colloid goitre and the sections have already been shown on the screen by Doctor Rhodes.

To say non-operative treatment is of no avail in this disease would be to admit looking at this question foolishly from one viewpoint. There are unquestionably cases in which surgery would be worse than hopeless, and it is to this class of cases absolute rest means so much. Of course rest, both mental and physical, is the basis of all medical treatment in this disease and drugs are simply employed to relieve the symptoms as they may arise in hope of adding comfort to this complete rest.

Mistakes are made by surgeons in diagnosis as well as by medical men, and many lobes of glands have been removed in which the pathological picture does not bear out the diagnosis of hyperthyroidism. If such errors are made by surgeons, it is possible and, in fact, probable, some of the recorded cases of complete cure of hyperthyroidism by rest would also fall into the category of false impressions. This being the status of affairs, I believe it

highly important every case should be in a hospital and under the observation of both a medical and surgical man, so that if the symptoms do not improve by absolute rest after two or three days, then rest should be prolonged until the patient reaches the point of greatest resistance. If, on the other hand, especially after mental rest, the symptoms continue to increase, some form of serum or drug treatment should be employed, and personally we believe it is this class of cases in which the serum of Rogers and Beebe finds a place.

Case—Hospital No. 360—Mrs. W—, referred by Dr. Norris of Salem, Va., exemplifies this point. Patient first seen about three weeks before admission, and after consultation with the family physician it was decided to try the serum as operation could not then be considered. Six hours after the first injection, the patient was able to retain some liquid nourishment—the first she had retained in over two weeks—and from that day her diarrhoea and other symptoms began to improve. For two weeks the improvement was gradual under serum therapy, when she began to return to her previous condition and it was soon seen the serum would have no further effect, so a partial thyroidectomy was performed with very satisfactory results. Do not believe this patient would ever have reached a point in which the operation was justifiable without the use of the serum, but, of course, this contention could never be maintained.

Hecht¹⁵ believes this serum causes injury in other organs, but we used it every two days for over one year and saw no ill effects. If, after pursuing the above procedure, there is no improvement, the surgeon had best give a guarded prognosis and employ the pole ligation of Stamm, or tying of the vessels after the manner of Kocher.

Crile¹⁶ had demonstrated beyond question the "psychic excitation" to be a most dangerous factor in operations for this condition and in order to offset this has gone so far as to obtain permission of relatives or friends of the patient to operate without the knowledge of the patient. This is done by having the patient given a hypodermic of sterile water every morning and in one-half hour an inhaler placed over the face and someone of the essential oils, especially eucalyptus, dropped on the same. This routine is carried out

sometimes as long as two weeks, or until the patient is no longer suspecting any operative measure and when that day is determined, which of course varies in different patients, a hypodermic of morphia and atropin is substituted for the aqua-puncture and ether replacing the essential oil.

This fact of "psychic excitation" having been so clearly demonstrated by many surgeons since Crile's report, does certainly indicate the inadvisability of a local anæsthetic.

The ideal procedure is to remove one lobe and the isthmus, but if the other lobe is also enlarged it is best to ligate the superior thyroid vessels of this lobe as well.

Other methods of operation than excision have been advocated, such as exposure of the thyroid without excision and the excision of the cervical sympathetic as advocated by Jaboulay.¹⁷ The first has been found to be as dangerous as excision and far less effective while the latter only relieves the exophthalmos; therefore, both have been abandoned. Ligation of two or more of the thyroid arteries (Kocher) has been employed as a preliminary step to a later excision and in a number of cases an excision has not been necessary. This along with the "pole ligation" of Stamm has, as has been mentioned before, a distinct and definite place in surgery of the thyroid.

Some have stated the benefits derived from operations on the thyroid are due to the enforced rest and the relief of the mental anxiety, but not only do about 80 per cent. of the cases remain cured, but there is a definite change in the blood picture following operations, so clearly demonstrated Kocher,¹⁸ and such a state of affairs could certainly not be the result of any mental evolution.

Ligation of the arteries was done as early as 1886, by Woffler,¹⁹ and it was but one year later until Julius Wolff,²⁰ of Berlin, deliberately planned and performed the first recorded partial thyroidectomy. Since this time the evolution of the present day operation has been slow, but certain points seem to be definitely fixed. Briefly, they are about as follows:—Luska²¹ having estimated the amount of blood to the thyroid to be equal in volume to that conveyed to the brain by one carotid and vertebral artery, it is easy to be understood why the control of hemorrhage is an important factor.

As little trauma as possible for the absorption of the juice squeezed out plays an important part in the fatal cases of post-operative hyperthyroidism. Care not to injure or remove the parathyroids by staying in front of the posterior capsule, as the association of these little glands to tetany has been definitely proven.

Care of the recurrent laryngeal nerve on account of its association in the formation of voice sounds; not to make too much traction on the gland as many operators believe such is associated with those cases of sudden and usually fatal collapse of the trachea.

Capelle²² has demonstrated the importance of not operating on the cases showing a persistent thymus, for the vast majority of cases dying after thyroidectomy possess a thymus almost the size of the new-born. However, it is impossible to ascertain the size of the thymus to any degree of certainty and even the best of X-ray plates will not differentiate this gland from the fat so frequently found in this locality and therefore very much doubt our ability to utilize this fact.

Also in advanced Graves' disease, degenerative changes in the thyroid gland sometimes lead to positive signs of myxedema, and, of course, one should be careful not to operate upon such a case, for the removal of part of the gland would hasten the damage done by this progressive destructive process.

As in many instances in surgery, one is forced to divide the treatment of cases into two classes, one representing those patients with sufficient financial means and the other, the much larger class, those without. If a patient belongs to the first class, it is best to try prolonged rest, combined with some form of serum or drug treatment, and if this is without avail, after two months of honest trial, then have performed a partial thyroidectomy.

The larger class are not able to do this, however, and therefore, believe it is best to as quickly as possible bring the patient to the maximum point of resistance and then resort to surgical help.

Rogers²³ summarizes his report of 480 cases treated with serum about as follows: 15 per cent. cured, 10 per cent. without symptoms, but still showing exophthalmus, 50 per cent. improved, 17 per cent. unimproved and 8 per cent. dead.

Jackson and Mead²⁴ in their work with the "neutral" hydrobromate of quinine at the Massachusetts General Hospital, divide their cases in two classes; those they have heard from by letter, and those they have seen personally. In the first class there were twenty-nine cases divided as follows: 69 per cent. cured, 20 per cent. unimproved and 10 per cent. dead. Of those they have seen personally, there are 56, divided as follows: 75 per cent. cured, 13 per cent. slightly improved and 11 per cent. unimproved.

McWilliams²⁵ reviewed the reports of the following prominent nine surgeons: Klemm, Garre, Reidel, Kreche, Crile, Halsted, Mayo, Ferguson and this covered 1,055 operative cases, with a mortality of about 4 per cent. Klemm²⁶ having operated on 32 cases without a death, 92 per cent. recoveries, 4 per cent. improvement and 4 per cent. failures.

Realize these are the figures of leading surgeons, but as yet no such series of cures has been reported by medical means and until some such report is made, believe partial thyroidectomy offers the best and safest chance of relief in the hands of well trained surgeons, for the greatest number of people.

A brief summary of our own work is as follows: Nine (9) partial thyroidectomies with one death; 7 completely cured and 1 greatly improved—this extending, however, only over a period of less than three years. 8 cases treated by rest, serum and drugs, 2 of which were considerably improved while using Rogers' and Beebe's serum. 3 deaths all with acute hyperthyroidism, and 3 not improved.

Believe the death following the partial thyroidectomy would have been avoided by the pre-operative employment of serum, and a two step operation instead of the removal of a part of the gland. This was also one of our earlier cases and very likely the operative technique added materially to this failure.

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THE TRAINING OF THE NURSE.*

By CHARLES S. WHITE, M. D., Washington, D. C.
President of the Hippocrates Society, of Washington, D. C.

It may seem presumptuous on the part of any practitioner to ever consider the subject—"Training of the Nurse"—except in the most diplomatic manner, for custom decrees that the rearing of the tender thought, her physical and moral welfare, had best be left in the hands of her own sex. Of the moral welfare, I say "amen" with the spirit of the times, and believe it is safer with as little masculine intervention as possible. But there arise occasions where we believe that some reforms or at least some progress is necessary to make the trained nurse more efficient as our assistants. They have come to stay.

There seems to be very little uniformity in respect to training of nurses. We find many different requirements regarding age, terms of probation, emoluments, course of lectures, in fact, about the only point in common with which the various schools are in accord is that they must be females.

More than absence of organic soundness is essential in considering the physical qualifications of candidates. We should have an approximate weight for height just as the army requires for its recruits. Think of some probation nurses you have seen. They vary from the torpedo to the dreadnaught type, sparrows

to ostriches, or bantam to heavyweight. The huge proportions of some unfit them for care of the esthetic, and the dainty architecture of others makes them only a shadowy ornament in the room of a delirious man.

Mentally there is room for improvement. We are all cognizant of cases where nurses lack sufficient gray matter primarily, and secondarily, lack development of a naturally good mind. Such women are at a great disadvantage, as they can never expect to achieve any prominent position in nursing circles. This is not a criterion of success however. She must be able to write a legible hand and to express herself clearly. Would you think a nurse who, in her final examination, wrote of the sphincter ani as the "spinster ani" a proper one to take up the work? Some are never able to master the arithmetic of hypodermic medication and the making of diluted solutions from concentrated ones.

Every person is moral until proven otherwise. Little can be said regarding the morality of nurses admitted to the training school, except that the moral plane is at about the same level as groups of women in other stations, whether it be the seminary, pink tea, the chorus or department store.

The period of probation should count in the total time spent in training, generally three years, which is the rule in many hospitals. During the first two months it is the duty of the Superintendent of Nurses to determine definitely if this applicant has the qualifications of a good nurse and whether she can be taught. It cannot be gainsaid that we are daily witnesses to the fact that many are accepted that should not have gotten beyond the vestibule, in justice to herself and in justice to the profession. For the lack of nurses, or from undue outside pressure, these women are admitted to the training school. Another reason is that the head nurse does not get an intimate acquaintance with this probationer. The aforesaid head nurse conducts herself much as a general reviewing his troops and does not know the good or bad points because she does not come in contact with the candidate. She may take the word of an assistant who is likely to let bias flex her good judgment. To my mind, this is one of the crying needs in reform of the training school. The actual training of the nurse is haphazard and

*Read at a meeting of the Hippocrates Society, May 26, 1911.

disorderly. She is to have so many months here and so many there, but this is more theory than fact. They are shifted to obscure work should they be particularly good looking, or given especially attractive assignments if they are in the good graces of the powers that be. If she proves particularly apt at a certain duty, she is kept at it, because it makes the management for the head nurse much easier. Some nurses receive one week in the operating room, others receive two months. Ask any graduate if she received her quota of work in each department. Nine out of ten will tell you that she has been slighted in certain parts of her training.

The teaching itself, is my theme. The curriculum seems inconsistent from the viewpoint of a physician. In one large hospital in this city, the total time devoted to theoretical instruction is one hundred and fifty-two hours, equivalent to one hour each week for the entire three years. Perhaps that is enough, but consider also the assignment of subjects and time allotted to each. Anatomy is covered in ten hours, while nursing diseases of the skin, exclusive of contagious diseases, is five hours. Gynecological nursing is three hours, while bacteriology is given five hours. Imagine the wonderful benefits from a five-hour course in bacteriology to the trained nurse. Bandaging is not taught apparently. Another hospital, not many miles away, gives laboratory work in the analysis of urine and stomach contents, and perhaps this too is essential. From one training school report, I note that lectures are given in Public and Private Charities, Settlements, Professional Work in Institutions and Families, State and Alumni Associations, and this is surely a step in the right direction. Can any one tell me what earthly use gastric analysis is to a nurse, or what special nursing is required in diseases of the skin? The entire course is entirely too theoretical and the practical knowledge that is obtained is largely self-appropriated. One training school in this city keeps their nurses on duty from 7:30 A. M. to 7:30 P. M., with two hours off during the twelve. At 8 P. M., they attend lectures or quizzes until 9:30 or 10:00 four times per week. They must have all lights out at 10:30. There are left three evenings per week for study, writing notes of eight hours of lectures or quizzes, recreation, keeping the room tidy,

etc. It is generally conceded that most nurses are overworked on duty, and it is equally plain that they have too much imposed upon them off duty.

The course of lectures is given by several members of the visiting staff, at least so the report reads, yet in reality an interne is often intrusted with the course, and the head nurse or assistant head nurse holds recitations. The crying need is clinical teaching, bedside instruction. While the nurse's work is essentially bedside, yet how often has anyone seen a clinic given for the benefit of the nurse? Did you ever see a class of nurses having the early signs of meningitis demonstrated on the patient? Did you ever see them taught the significance of pupillary changes in cerebral injuries? Did you ever see them taught properly the catheterization of a patient? If so, the occasions have been marked by their rarity. We leave a nurse in charge of a patient with suspected intestinal obstruction, for instance. Who has taught this nurse that relief of pain, a slow pulse and subnormal temperature is a bad omen? We have left such teaching to someone, somewhere; further than that we know nothing. Above everything else a nurse should be practical; she is the guardian of our patient, our substitute, and often the first to recognize changes in a patient's condition. No one needs that training any more than a nurse. The training school does not propose to graduate doctors, but it should graduate keen, reliable observers. As a matter of fact, a large proportion of nurses observe a case and make their own deduction from knowledge they have gained at lectures and their own senses help them at the bedside. What would a medical course be without clinical demonstration? A mere reading of the practice of medicine only conjures up in our minds a symptom—complex without end. One is reminded of Jerome's "Three Men in a Boat," in which one of the party in an effort to diagnose his ailment concluded he had every disease in the index except house maid's knee, and only excluded this on the ground that he was not a house maid. I have felt for some years that bedside instruction for nurses was just as indispensable to their training as changing of beds, giving of enemas, etc. Think of the amount of clinical material wasted.

A nurse of an inquiring turn of mind generally receives a sharp rebuke if her inquiries are numerous or deeper than the hand-me-down knowledge of the head nurse. Some of the notions instilled in the unsuspecting nurse have an antique history. It is very much like the legend of Hiawatha—from generation to generation certain traditions, customs, or practices are incorporated into the education of the nurse. A certain method of bathing the patient, let us say, is in vogue in a certain hospital and has been for years. The head nurse does it this way because she was taught so, and so on back. It has no alpha or omega. Our friend Omar, paraphrased, says:

"Myself when young did eagerly frequent
Doctor and nurse, and heard great argument,
About it and about; but evermore
Came out by the same door where in I went."

The dispensary could be used for similar purposes, for here we could teach the lesson of prophylaxis in cases of diphtheria, smallpox, erysipelas, and T. B.—all dangerous cases to the community.

The nurse needs a large amount of individual attention to bring out her best qualities. In a profession where personality, tact, diplomacy or what you may, is a large factor in the management of a case, a doctor learns by sad experience but it is in the hands of the Superintendent of Training Schools to avoid an embarrassing and discouraging beginning. It is just as essential to teach a nurse to entertain or divert her patient as it is to take the temperature. A nurse is oft-times successful because she understands human nature better than she does materia medica, but is a daughter of the blue and white ever taught to read and do those many little things which bring them closer to their patients, who rise up and call them blessed? No. It is generally a question of compressing as much work as possible in a short space of time.

The work that is required of a nurse is not solely for the purpose of perfecting the art. There is too much repetition. The girl of average intelligence could learn in two years what is generally taught in three, if the work was progressive. A nurse is detailed to the care of infants for two or three months, whereas two or three weeks would suffice. Ward duty is largely routine after a month or two. After proficiency is attained in one class, she should be advanced, but we do not

see such gradation of the duties, but find that at the end of three years one nurse has had a large experience in the operating room, another has scarcely had any such experience, another will spend a very long time in the dispensary, while another has had an unusually long duty in the diet kitchen. To verify this statement, I can cite a number of examples of nurses who have not completed their training, who will pose as graduate nurses and the physician and patient are never the wiser.

How is the nurse instructed in practical surgery? She is allowed to watch one or two operations then she is supposed to be sufficiently prepared to be an important assistant—one who can contaminate the entire operative field. She may or may not fully realize the importance of strict asepsis. She may be the custodian of sponges or the passer of instruments. In her first few operations she is likely to be so rattled that she does not know a flat sponge from a pancake, nor a needle holder from a can opener. Nevertheless, she is expected to be an asset in the operations. Most hospitals are extremely economical in two things, food and information. It evidently has never occurred to those who work for perfection in technique to have a fake operation, *i. e.*, to go through the entire preparation for an operation without an actual patient, explaining step by step the *raison d'être*. If we can only impress a nurse, or any one for that matter, by giving a reason for doing thus and so, such knowledge lingers. I am told that in some hospitals demonstrations are given the nurses in technique by taking cultures from the washed and unwashed hands, by cultivation and inoculation of animals.

Either the courses are too long or more could be taught in the time devoted to the training. The attitude of the nurses in charge is often quite beyond understanding. Very few women are really capable of assuming charge of a training school, for, as long as they are women, so they will be impulsive, strong in likes and dislikes, and liable to rule with prejudice. Many head nurses are not selected for their efficiency as teachers, but largely for their executive ability or power to get maximum work in a minimum of time. The fact that it requires a woman of equanimity, tact and firmness, and sense of justice, never

seems to have occurred to many Boards of Directors. On the other hand, it is often on sentimental grounds alone. One is selected because she was a graduate of the school, or some influential friends have strongly recommended her, or she saved money in some department. It hardly occurs to such a board to consider her relations as a disciplinarian or an educator. We see too much of the graduate of the school put in charge. What most training schools need to-day is the infusion of new blood—to get away from old ruts—and this can be done by going outside of the school to fill vacancies. Rotation in office in this manner is a great mistake and it takes years to correct the evil.

Very few hospitals make a decided effort towards teaching of nursing in the home. A good institutional nurse may be a very poor private nurse. If the nurse in training could be sent from the hospital to the home for a few weeks in her course, her work reported on by the physician in attendance to the Superintendent of Nurses, it would be of inestimable value and prevent many awkward situations. No nurse accepts her first call but with fear and trembling, much as the embryo doctor jumps when his door bell is rung for the first time, only to find in the doctor's case that it is a collector.

A word or two about the relation of the graduate nurse to her hospital. It varies greatly, and why? Largely because of the attitude of the superintendent during her training. Some nurses are subjects for the displeasure of their superiors from the probation period to the graduation, and when they leave the training school they feel that they cannot expect fair treatment. We know that certain nurses who are in favor with this Grand Dame of the nursing school receive many calls, while others less fortunate are hardly known to this Czarina. In matters of punishment or ruling with the iron hand, let me say that the Superintendent of Nurses is in a class alone. She is everything from plain cop to the Supreme Court and nothing is "unreasonable." You can be in contempt of court in eight hundred and thirty-six ways. The meekness with which the nurse in training submits to such astigmatic judgment almost makes one approve of some of the dissolutions of which the clan is sometimes accused.

Let not my remarks be understood as iconoclastic or a ruthless assault on the present day methods. I have only attempted to point out in a crude and impolitic way my individual opinions. I realize that the training schools and the graduates have done wonders for our profession, and we shall ever be grateful to them, but they lack perfection, and I trust that I can, in some more material way than by this paper, assist in raising the present standard and system of teaching.

FABLE OF THE LEMONIZED NURSE.

Once upon a Time, a Simple Thing in Calico, while Handing Purin free Diet to the Poultry, telescoped an Idea. For many Moons she had heard Sounds at Night. It might have been the Love Note of a He Frog, but to her it was a Call to Noble Duty such as Healing the Sick, Staunching the Gory Stuff on bloody Battlefields and other Hop Hallucinations. And She was the Real Thing about the Sick;—just a Natural-Born Nurse, because she had pulled Jim Powers through the Jaundice and saved Peter Burrows when seven Moth-eaten Doctors had given him up.

And in Due Time it came to pass that She headed for the Antiseptic Emporium with a Letter from the Minister congested with "Spotless Reputation," "Devotion to Duty," and other Bovine Excrement, and Old Doc 'liwed She was sound in Wind and Limb. The nursing Notion received Swat No. 1 just after the Oatmeal and Potatoes. She was Gently but firmly led to the Cake of Sandsoap and some Porcelain Goods then pushed off the Dock. But She could never finish the Job. Just as soon as a Dent was made in the Invoice of Bed Pans, Basins and other fancy Articles, a New Consignment was shipped to Her. In about two Weeks she had gotten a Polish,—and ready for the next degree. A course in bed making and dusting is then on the Docket. If she Bats about Four Hundred and Forty in the Chambermaid League, She is Boosted to Assistant Cook in the Diet kitchen, where by a little Discrimination in picking out the Good Ones She may slip a few Classy Calories under her Straight Front, Something impossible in the Dining Room. At regular—very regular, and short—and very short, Intervals, the Superintendent of Nurses hands Her a Bunch of Knowledge something like this:—

"You left an Egg laying on its left Side—Never let this Happen again—a Nurse was Dismissed for this."

The Senior Nurse, when Over Charged with little surplus Energy pounces upon this unsuspecting New Thing with the confidential Advice that she will never make a Nurse. After about five or six Months, if her constitution is Chrome-Nickel, she may be lucky enough to see a Patient. Then she is Bombarded with Lectures, Quizzes, Written notes of Lectures, ten Hours Work a Day, Complaints of Patients, and numerous Requests to go to the Office for Official Pulverization. If an Embryo Smile ever escapes in the Presence of a House Doctor, the Curfew Bell for her for a Couple of Months. And for a Year or two she is Receiver General for every old Kick. Reaction is equal to Action, but in the Opposite Direction. As a Senior she has Stored up in her System a lot of Cussedness and the first Rookey in the Fold gets it and gets it Good. She may eventually be selected to be the Big Stick of the Red Cross Joint and We have the same old Vicious Circle. She Hands Back all she got and Then Some.—And the moral is that "It is a long worm that has no Turning." *The Farragut.*

Proceedings of Societies, Etc.

AMERICAN PROCTOLOGIC SOCIETY.

Reported by LEWIS H. ADLER, Jr., M. D.,
Philadelphia, Pa.

The following is an abstract of the principal papers read before the American Proctologic Society, at its meeting in Los Angeles, Calif., June 26 and 27:

Dr. Samuel T. Earle, of Baltimore, Md. read a paper,* in which he reviewed proctologic literature for the period from March, 1910, to March, 1911.

How Can an Infected Sigmoid Diverticulum Be the Cause of a Retro-Peritoneal Abscess?

By A. TEIRLINCK, M. D., Gand, Belgium.

In the present state of abdominal surgery the appendix is frequently regarded as the chief cause of all abdominal troubles.

Recently, numerous works have been published concerning sigmoiditis and peri-sigmoiditis. Diverticular abscesses are not as frequent as appendicular abscesses. It should be borne in mind that the sigmoid is often located in the right iliac fossa and diverticular abscesses may be mistaken for appendicular trouble.

In the young the sigmoid flexure is free and communicates with the retro-mesenteric and preaortic cellular tissues by the tissue of the meso-colon. Infection can be transmitted from the diverticula into the retro-peritoneal cellular tissue by three means,—the connective tissue, the lymphatic system, and the venous blood vessels.

In adults the sigmoid is adherent to the posterior abdominal wall, and in such cases there is another source of infection—an external one—due to the numerous anastomoses between the meso-colic glands and the parietal lymphatic system and between the sigmoid blood-supply and that of the retro-peritoneal region.

Some Observations Upon the Surgical Anatomy and Mechanism of the Colon.

By GRANVILLE S. HANES, M. D., Louisville, Ky.

Until comparatively recent years, diseases of the colon and sigmoid, and the surgical anatomy of each, received but scant attention. Recently, however, much valuable information

upon this subject has been developed. Robert Coleman Kemp, in his work on Diseases of the Stomach and Intestines, says that Dr. J. M. Mathews was the first to call attention to sigmoiditis and diverticulitis of the sigmoid.

The entire length of the large bowel *in situ* is found to be much shorter than when it is dissected from its attachments. An ordinary thirty-inch colon tube has sufficient length to extend around the lumen of the large bowel to the cecum. While this has not been done in the living individual, it has been done in the cadaver, and radiographs of the same are on record.

It is almost universally believed that ordinary flexible colon tubes can be manipulated in such a way as to traverse the entire course of the large bowel around to the cecum. It has been proven by a number of investigators that such an achievement is impossible in the normal bowel. The average length of the sigmoid is about eighteen inches, and this being a floating portion of the large gut, it is almost impossible for an instrument to pass beyond the middle half of the sigmoid. Should such be possible and the tube enter the descending colon, it would be a physical impossibility for it to pass either the acute angle at the splenic flexure or the hepatic flexure. The failure of instruments to pass high into the bowel has been demonstrated by X-ray pictures.

Dr Hanes demonstrated the difficulty in passing any instrument through the hepatic and splenic flexures by introducing a thirty-inch, No. 20, French, soft rubber, catheter into the caput coli in an old appendicostomy case. He failed by any kind of manipulation to pass the catheter through these flexures. The tube was allowed to remain in the head of the colon for twenty-four hours, with the hope that peristalsis would carry it around, but this failed. After manipulating the second time, three hours later, four inches of the catheter appeared through the anal opening.

He forced bismuth solution into the head of the colon, till the wall of the gut was thoroughly distended, and then Dr. E. Bruce made a skiagraph. No regurgitation into the ileum occurred. This experiment was repeated a number of times with the results as above given. If the ileo-cecal valve allows no reflow into the ileum, then exceedingly

*Note by Editor.—Abstract of the article as sent this office is too skeleton-like to be of special value, and is, therefore, omitted.

large amounts of water injected into the bowel are retained in the large gut, and not a part of the amount passed into the small bowel, as is supposed by some.

In an old appendicostomy case, with the patient on the left side, coal-oil was poured into a colon tube that had been introduced three inches into the rectum. In six and a half minutes the oil was flowing out of the appendicostomy opening. The amount employed was thirty ounces. This clearly demonstrates that liquids will easily pass around the entire colon without flowing through the tube. The point is also made that coal-oil is much less irritating to the mucosa than plain water or ordinary aqueous solutions.

The capacity of the large bowel *in situ* was measured by temporarily closing the opening of an appendicostomy case and allowing coal-oil to flow into the rectum, as long as the patient could tolerate it. At a later date the same experiment was made by allowing oil to flow into the head of the colon. About the same amount of oil was received in each case. After making the same experiments in other cases, it was decided that the average large bowel had a capacity, varying between fifty and sixty-four ounces.

The capacity of the rectum was ascertained by inverting the patient and placing a colpeurynter at the junction of the sigmoid and rectum, just within the sigmoid. The colpeurynter was then distended with air until no fluid could pass into the sigmoid. Coal-oil was allowed to flow into the rectum till no more could be received. It was then drawn off with a catheter, and the average amount was found to be between fourteen and seventeen ounces.

He insists that the Inverted Position (Hanes) is much to be preferred by both patient and operator when any kind of illuminating instruments are to be employed in the rectum or sigmoid.

Have We An Ideal Operation For Internal Hemorrhoids?—A New Hemorrhoidal Clamp.

By A. B. COOKE, M. D., Nashville, Tenn.

An ideal operation for internal hemorrhoids must embody the five following surgical principles and precepts:

I. Complete hemostasis.

2. Immediate closure of the operative wounds.

3. Preservation of the function of the parts.

4. Permanency of cure.

5. Due consideration of the factors of safety, simplicity of technic, time required for recovery, and the amount of post-operative discomfort.

The ligature operation violates principle 2.

The clamp and cautery operation falls short with reference to the fourth class of principles in each of its several points.

The Whitehead operation violates principles 1, 3 and 5 and is, moreover, an unnecessary and unjustifiable procedure.

The operation by means of Earle's clamp is a modification of the Whitehead method and a vast improvement upon it, but is apt likewise, to violate principle 3.

Pennington's enucleation operation is open to criticism under classes 1 and 5 of the surgical principles. In spite of its ingeniousness, it is dangerous.

The Clamp and Suture operation described by the author fulfills all conditions and is entitled to be considered the most nearly ideal of any yet devised.

A new hemorrhoidal clamp designed to facilitate the last named operation was presented and strongly recommended.

Foreign Bodies in the Rectum.

By T. L. HAZZARD, M. D., Pittsburgh, Pa.

The paper consisted mostly of a recital of four recent cases of foreign bodies in the rectum. Two were in children, in which the substances were accidentally swallowed, and the others were adults who introduced the bodies directly into the rectum through some perversity:

Case 1. Baby girl, two years old. Referred for dysentery of three months' duration, the chief symptoms being bloody stools, mucus and tenesmus. No digital or other local examination had previously been made. Examination with the little finger showed the presence of something lying across the bowel, low down. A guarded pair of scissors was introduced and this body was easily cut in half and removed. It proved to be a match, or at least, nearly two-thirds of one. Although the ends of this match were firmly fixed in the sides of the

intestine, no abscess followed. Recovery was rapid and uneventful.

Case 2. Boy, a little older than the first case. The symptoms, conditions and procedure were the same as the preceding case, but the foreign body was a bone from a frog's leg.

These cases show the necessity for rectal examinations. In one case a bacterial microscopical test had been made, but was rather misleading than otherwise.

Case 3. Self-introduction into the rectum of a prescription bottle, a "Baltimore oval" 3 oz. The mouth was upward. After considerable trouble it was removed by means of a blunt hook. It had been in the bowel for three days. No anesthetic necessary. The case progressed without any untoward incident. He gave no reason for his action, and no questions were asked, as he would not have told the truth.

Case 4. Adult, aged 45. Had been a cow-puncher. At present has no occupation. Came to Allegheny General Hospital. Examination showed the presence of a very thin beer glass, 2 inches wide, at the top, and 3½ inches tall. Sphincters contracted. No bleeding and but little discomfort. In attempting to remove it, it was broken. After it was extracted there was considerable bleeding from the rectum. He developed pelvic peritonitis and a rather large tumor developed in the left iliac region. This passed away and he was discharged in about three weeks, not altogether well of the pelvic pains.

General treatment in all cases was rest in bed, with frequent washing of the bowel with a one per cent. solution of creoline and normal salt.

Analyses, Selections, Etc.

The Influence of the Cold Bath Upon the Glycogen of Human Beings.

Such baths not only increase the elimination of poisons in many of the acute infectious diseases, but also re-establish circulatory equilibrium and prevent complications. It is quite probable that they also influence various protective processes in the body, although as yet little, if any, experimental evidence has been adduced in support of this view. One of the reasons for supposing that cold baths increase the protective processes is that the benefit which accrues

is so great that it is inconceivable that the mere equalization of the circulation, the reduction of temperature and the elimination of poisons can be solely responsible. As a matter of fact, we know far too little, except empirically, of the influence of cold baths upon the body, and for this reason careful original investigation along these lines possesses peculiar interest.

In the *American Journal of Physiology* of March 1, 1911, Lusk reports the results of his investigation as to the influence of cold bathing upon the glycogen content of the body of man. He finds that when normal men are immersed in water which is exceedingly cold, severe shivering at once comes on and that there is a rapid utilization of body glycogen, as indicated by a fall in the respiratory quotient to the fasting level. He also found that the cold bath very greatly increased heat production, which is a point of great interest in that, in the past, many physicians have supposed that the cold bath was advantageous in that it exercised an antipyretic effect; but for many years those who have regarded moderate fever as a protective process designed by the body to combat the infection have also recognized that the production of heat as the result of the cold bath was considerably increased, and that although the peripheral portions of the body may be cooled by this means, there is no actual decrease, but rather an increase, in the total body temperature. This, perhaps, is an explanation of part of the good accomplished by hydrotherapy.

The chief criticism which can be urged against Lusk's experiments is that the water which he employed was excessively cold, namely, as low as 10 degrees Centigrade; but in all three of his subjects, while the danger of such cold bathing was considered, no ill effects were induced save that after the bath there was considerable muscular lassitude. It is evident, too, that in all of his patients the circulatory condition was good, since the skin became intensely red, and they promptly reacted to the bath. He found, also, that the blood-pressure rose considerably, but that it was difficult to estimate it because the severe shivering interfered with accurate tests with the sphygmomanometer.—(*Editorial, Therapeutic Gazette*, August, 1911.)

Treatment of Pellagra.

George M. Niles, Atlanta, uses iron arsenite solution (16 minim ampules) and caecodylate of

sodium (1 cc. ampules each containing three-fourths of a grain of the drug) hypodermically on alternate days for one or two weeks. Then an ampule is given every second day, but still alternately. After the symptoms seem to be controlled, one injection weekly, alternately, is used for three or four months.

Internally, a combination of a saturated solution of potassium iodide and Fowler's solution in the proportion of 5 to 3, as suggested by Dr. Dorsey, is given after meals, beginning with five drops and increasing one drop daily until symptoms of arsenical saturation are manifested, when it is stopped for two days, the procedure being then repeated as before. This is continued until the sore eruption and sore mouth are abated; and then eight drop doses are given for several months. Should there arise gastric or intestinal intolerance, it may be necessary to reduce the proportion of Fowler's solution to one or two in eight parts.

For the frequent diarrhea, satisfaction is derived from bismuth-betanaphthol and resorcin with milk of bismuth as a vehicle. This failing, tannigen, protan or heavy doses of bismuth subgallate are prescribed, or, as a last resort, powdered opium. For the occasional constipation, either castor or enemas will serve, drastic cathartics being inadmissible.

For the sore mouth, a solution of thymol, one grain to the ounce of water with a little alcohol, is recommended, as is also a 25 per cent. solution of boroglyceride. Application of nitrate of silver solution, 20 grains to the ounce, is generally efficacious for the aphthous spots.

Lavage, every alternate day, with a 1 to 100 solution of boric acid, sodium salicylate, thymol or ichthyol is recommended in cases of diminution or absence of hydrochloric acid. It is well to precede them with a mild saline solution and follow them with plain water.

For the skin eruptions and sloughing, bland ointments are to be used. During their continuance the direct rays of the sun or even bright light is to be avoided. Compresses saturated with a mild solution of bichloride of mercury, ice cold, applied at frequent intervals, or baths in hot mustard water afford relief for the intense burning of the hands and feet.

A liberal diet is indicated, the flesh proteins being especially well borne. The author believes that the diarrhea appearing early in the course of the disease is of central origin and, to an extent, compensatory. It would follow,

therefore, that a diarrhea of this sort need not entail a too limited dietary. Later on, when the diarrhea has become inflammatory, the physcain may to advantage eliminate articles of food containing much cellulose, or yielding, after digestion, a residue of irritating particles. In any event, so far as is consistent with local conditions, the patient should be nourished to the limit of assimilation.—(*Journal-Record of Medicine*, July, 1911.)

Chronic Malaria Poisoning.

In every place where intermittent and remittent malarial fevers prevail at certain periods of the year, there will be found a certain number of persons whose health is poor, but whose symptoms are so obscure that a positive diagnosis is not easily made.

They are languid, weak and not disposed to exertion of any kind. Sometimes their temperature may vary from a half to a whole degree at irregular intervals, while at other times it remains at or slightly above the normal. The complexion has a more or less "muddy" tint, and the sclerotic coat of the eyes loses its pearly hue and has a dingy appearance. The tongue is slightly coated in the center and towards the rear. The appetite is fitful and the bowels sluggish. The blood is very deficient in hemoglobin and red-blood corpuscles. These patients are not compelled to cease their ordinary avocations, but pursue them with an effort. Their elderly female relations are apt to pronounce them "bilious," and to prescribe a dose of calomel. This makes them feel better for a day or two only.

These cases are generally "gamete carriers." Their blood is poisoned with gametes, a stage of existence of the malarial parasite which Dr. C. C. Bass, of New Orleans, says cannot be destroyed by quinine. They may be present in large numbers without causing any symptoms at all. Darling, however, has apparently demonstrated at Panama that the gametes can easily and quickly be destroyed by proper quininization.

These gametes supply the element for multiplication of the malarial parasite in the body of the mosquito, so that the unconscious gamete carriers are a cause of perpetuating the disease. They are also the cause of malarial attacks months after all mosquitoes are gone. The cases that show the train of symptoms first described suffer from a union of the sexes of

the parasites within the blood corpuscle, not the usual manner of propagation. The union is, according to Henson, marked by the appearance of a great number of pigment particles which soon are distributed through the blood stream causing the muddy complexion and conjunctivæ.

There is a plan of treatment for these cases which is generally so efficient as to be gratifying. First, the intestinal tract is cleared and disinfected by a quarter of a grain of calomel every hour till effectual. Then, in the case of an adult, ten grains of euquinine divided into two doses administered an hour apart, are given at 10 o'clock every morning for three successive days. The following prescription is then regularly administered: Euquinine, one drachm; powdered iron, two drachms. Sixty powders are made, six being taken daily at two hour intervals, beginning at 8 A. M.

Fourteen days from the last dose, the prescription is renewed and the same method followed. This is repeated three times.—(*South-ern Medical Journal*, August, 1911.)

Book Notices.

A Manual of Practical Hygiene. For Students, Physicians and Health Officers. By CHARLES HARRINGTON, M. D., late Professor of Hygiene in the Medical School of Harvard University. Fourth edition, revised and enlarged by Mark W. Richardson, M. D., Secretary to State Board of Health of Massachusetts. 8vo. 850 pages, with 124 engravings and 12 full-page plates, in colors and monochrome. Cloth, \$4.50 net. Lea & Febiger, Philadelphia and New York, 1911.

No branch of medical art is attracting more attention at the present day than preventive medicine, and its great possibilities for good have never before been more generally recognized and appreciated. Harrington's *Practical Hygiene* now appears in its fourth edition, this latest revision being completed and brought fully up-to-date by Dr. Richardson, the author's successor on the Massachusetts Board of Health, after the latter's untimely death while abroad. The volume before us discusses hygiene from every standpoint, and will easily hold its own as a standard work for health officers or physicians, and, while comprehensive, the practical value and importance of the subject combine to make it a most valuable text for the student.

American Practice of Surgery. A Complete System of the Science and Art of Surgery. By Representative Surgeons of the United States and Canada. Edited by Joseph D. Bryant, M. D., LL. D., and Albert H. Buck, M. D. Complete in eight volumes. Profusely illustrated. Vol. VIII. New York. Wm. Wood and Co. 1911. Large 8vo., XII; 1,146 pages. Cloth, \$7.

A critical review of this eighth and final volume of the series on *American Practice of Surgery* would consume more space than can be allotted it. Suffice it to say, we have no strictures to make—only are we surprised at its completeness. We find whole sections of the book given over to subjects which, to us, are new in a work of this kind; for, after extended discussions of regional surgery, etc., long chapters are devoted to a consideration of The Law in Its Relations to the Practice of Surgery, as well as Administrative Surgical Work, this latter division dealing at length with Hospitals and Hospital Management, More Particularly with Reference to the Surgical Needs of These Institutions, Military, Naval, and Administrative Railroad Surgery. The Appendix contains a most interesting chapter of about twenty pages on The Relation of Blood Pressure to Surgery besides a general index of 64 three-column pages for the eight volumes. This index may likewise be obtained separately, bound in green muslin, at a cost of \$1. Former volumes of this work have seemed good, but the surgeon doing much big surgery will surely find this last one practically irresistible.

Editorial.

Interpretation of Unusual Types of Poliomyelitis.

During the present world-epidemic of poliomyelitis, many of the cases have presented clinical pictures utterly unlike those of the older text-books; so much so that some physicians have declared their disbelief that they are poliomyelitis at all.

This attitude is due, however, to an erroneous interpretation of the meaning of symptoms and physical signs. It is specious to say that destroyed anterior horns is not the same disease as meningitis or rubro-spinal tremor. But the fallaciousness of this argument is brought home by the most commonplace illustrations; such as the unity of tuberculosis in

spite of the disparity of symptoms between glandular enlargement, osseous-caries, pulmonary catarrh or meningeal inflammation. Suppurating bubo, acute pneumonia, and fatal septicæmia is each a variant of the symptomatology provoked by the bacillus pestis; and only one of them need be present. Even the metabolic disorders show similar polymorphism. Were it necessary, we might give further illustrations in which the whole realm of pathology abounds.

The truth is that symptoms and physical signs are merely measures of the reactions of living matter to injury: and that the number and manner of these are comparatively few in type; and that perhaps none of them are pathognomonic of any specific noxa. Were this not the case, diagnosis would be a matter of mathematical simplicity; whereas it is as a rule a matter only of inferential probability, too often not even susceptible of proof.

Many have supposed that the clinical laboratory puts an end to the need for judgment in estimating the factors for a diagnosis, but a little reflection shows that no certainty is derived from this means of exploration either. For we know that healthy individuals carry the diphtheria organism, the pneumococcus, etc.; that the number of the tubercle bacilli in the sputum is no measure of a patient's incapacity; that a sick person's failure to react to the typhoid bacillus may be the cause of an absent Widal reaction, although an undoubted enteric fever is killing him; that the Wassermann reaction is not even generic *qua* organism, the patient reacting in this way in the presence of organisms, such as that of lepra, far removed from the spirochætæ!

These facts offend the logical sense only of those who do not appreciate how variable is the manner of reaction of living beings in accordance with the enormous complexity of their organization.

We are beginning to have some inkling of the nature of these complexities in our study of the amino-acids. But we have not yet ascertained the constitution of even the best known proteins beyond from 40 per cent. to 80 per cent. of the total amino-acids present; but we already do know the enormous difference which exists between the amino-acid constitution of such proteids as gliadin, zein, ovalbumin, casein, myosin, etc. For while

gliadin contains over 37 per cent. of glutamic acid, ovalbumin contains only 9 per cent. and chicken myosin only 16 per cent.; while of leucin, maize contains nearly 20 per cent., and wheat gliadin less than 6 per cent.; and differences extend to the whole gamut.

While we are far from such exact analysis of the physical constitution which determines specificity, yet anaphylaxis to the serum of a different species is now a measurable phenomenon, and there is nothing to make us think that it differs from the phenomena which occur as a result of what we call idiosyncrasy to certain albumins. The urticaria presented by some otherwise apparently normal people when they consume egg-albumin, strawberries, shell-fish, etc., respectively, corresponds in every way to the anaphylaxis studied in the laboratory. The reaction of some people to poison ivy is also anaphylactic.

Now, added to those governing relative and absolute immunity, these considerations form ground for the inference that it is in such individual peculiarities of reactivity of respective protein molecules that we shall find the explanation of the differing symptomatology produced by the same agent of disease in different persons.

The reaction to the noxa of poliomyelitis is no exception to this law. The recent epidemics have shown that the anterior horns may escape entirely in cases of severe infection in which the meningeal structures are actively inflamed. The disease producer is, however, unequivocally the same in the two cases; as is proved by the passage of the virus from monkey to monkey in the laboratory. In these animals, the same virus gives rise to the very variable manifestations shown in human beings during the present epidemic.

T. A. W.

Medical Society of Virginia.

As time approaches for the meeting of the State Society in Richmond, October 24-27, now about one month off, indications point to a large attendance and an important session. Arrangements are being made with the railroads for reduced fares, and it is expected that the hotels will also offer inducements. Besides the papers and other matters to claim attention, visiting members will likely find much of interest in the clinics of the two local medical schools.

By resolution of the Society, the new re-districting plan will not go into effect until the 1912 meeting, when all old councilors, both from the State-at-large and the ten Congressional districts, retire from office, and councilors for the fifteen new districts are elected. Consequently, five new councilors will have to be elected under the existing arrangement to supply the vacancies that will occur near the close of the coming meeting. Those whose terms expire by limitation are—from the State-at-large—Drs. C. V. Carrington and Geo. J. Tompkins; and from the 1st, 3rd, and 10th districts, respectively, Drs. C. P. Jones, A. L. Gray, and S. H. Burton.

This is the special season when all members should be trying to secure applicants for membership, and a little work at this time will help wonderfully. Send applications with the fee of \$2 either to the Secretary, Dr. Paulus A. Irving, of Farmville, or to the Chairman of the Membership Committee, Dr. W. T. Turner, Smithfield, Va.

The Transactions of the Society, issued during August, proved a drain on the treasury, the bill for printing, postage, etc., amounting, in round figures, to about fifteen hundred dollars. The Treasurer, Dr. Greer Baughman, of Richmond, therefore urges that members will pay their dues as promptly as possible, so that his working balance will sufficiently enable him to meet all Society obligations without delay.

The Southside Virginia Medical Association.

The thirty-fourth session of this Association held in Emporia, September 12, was one of the most interesting in its history. The program included a number of excellent papers, and the reception committee, composed of Drs. E. M. Parker, R. T. McNair, and J. T. Davis, all of Emporia, had provided pleasant entertainment for their guests. A banquet was given in the evening at the Hotel Virginia. Drs. J. Bolling Jones, Petersburg, and E. F. Reese, Courtland, are president and secretary, respectively, of the Association.

It was decided to hold the next meeting at Lawrenceville, Va., December 12, 1911, and Dr. D. D. Willcox, of Petersburg, was chosen leader of the subject for general discussion.

The Rappahannock Valley Medical Association

Met at the home of Dr. W. A. Harris, at Spotsylvania C. H., September 15, and was largely attended. After the business meeting, the doctors were handsomely entertained by Dr. Harris.

The next meeting will be held in Fredericksburg during November, at which time Dr. F. C. Pratt has been appointed to read a paper.

Mississippi Valley Medical Association.

To those familiar with the interesting and pleasant meetings of this Association, it will hardly be necessary to do more than again give the date. The meetings will be held in Nashville, Tenn., October 17-19, 1911, with headquarters at the Hermitage Hotel. A large attendance is anticipated, and a number of papers will be presented.

Dr. Wiley Exonerated.

After reviewing the charges preferred by the Personnel Committee, Department of Agriculture, against Dr. Harvey W. Wiley, Chief of the Bureau of Chemistry, President Taft fully vindicates him of any disobedience of the law, and believes the recommendation of the Committee would have been different, had all facts been known to them. There was no doubt from the first that Dr. Wiley was not deserving the fate which it seemed would be meted out to him, and it is gratifying to those who have been cognizant of the good he has accomplished to know that he has been placed in the right light. It is hoped he will be given all the power necessary to accomplish the great work he has undertaken in the uplift of the Pure Food Law.

The Richmond (Va.) Academy of Medicine and Surgery

Resumed its semi-monthly meetings on the 12th of September, after the usual summer intermission.

Personals.

The following Richmond physicians have recently moved their offices:

Dr. Blanton L. Hillsman, to 411 West Grace Street;

Dr. Lawrence T. Price, to the Franklin Building, at the corner of Third and Franklin Streets;

Dr. Philip Taylor to the corner of Sixth and Grace Streets.

Dr. Stuart McGuire has returned to the city from his usual summer vacation.

His many friends will regret to know of the continued serious illness of Dr. John P. Davidson at his home in this city.

Drs. Monte Griffith, Francis M. Chisolm and Thomas A. Poole, of Washington, D. C., have become associated in the practice of diseases of the eye, ear, nose and throat, at the Farragut, Seventeenth and Ist Streets, Northwest.

Dr. John G. Trevillian

Recently returned to his home in this city, after an absence of two months spent in the White Mountains, and at Saratoga, N. Y.

List of Virginia Physicians.

The Virginia Health Department, in its September Bulletin, published a list of the physicians practicing in this State together with a roster of local health officers of the counties and cities of Virginia. A copy may be had upon request sent the Department, Richmond, Va.

The University Medical College of Kansas City,

Which announced that it would close its doors at the end of last session, has been re-organized, and has made alliances with a number of colleges and universities to care for the first two years' work of a regular medical school for their students, after which they will receive them for the work of the junior and senior classes. Several specialties will be taken up in these two years which were not formerly included. The course has also been lengthened to five years, so as to include one year of practical work in a hospital.

The Red Cross Seals

Will be sold again this winter under the auspices of the Virginia Anti-tuberculosis Association, to aid in the war against the white plague in this State. It should be borne in mind, however, that the use of these seals on the face of packages and letters causes con-

fusion, and has been prohibited by the post-office authorities.

Automobile Offered for a Name.

The Detroit Board of Commerce is offering a handsome new Flanders "20" car, worth \$800, to the person who suggests the best name for its annual *Water Carnival*, which will be held during the week of July 24, 1912. The contest is open to people everywhere, the object being to secure a name which may be taken from any language so that it is unique, "catchy," and characteristic of Detroit. All names must be sent to Contest Department, Board of Commerce, Detroit, Michigan, before October 16.

For Sale---Physician's home and practice, thickly settled, prosperous community. Piedmont Virginia. Modern house, 30 acre farm. High school and railway station within 500 yards; 35 minute drive to city of 25,000. Unopposed practice worth \$3,000 annually. Three horses, buggies, 2 cows, farm tools. Price \$6,000. To quick purchaser, long credit for half the price. Real estate worth the price. Address "T. R." care *Virginia Medical Semi-Monthly*.

For Sale---Having decided to specialize on Disease of Children, I wish a competent man to take my practice in a Virginia town, in the most beautiful portion of the Shenandoah Valley. Address "W. L.," care *this Journal*.

For Sale---A valuable medical library, full set of instruments, operating table, etc. These must be sold at once, to settle the estate of the late Dr. G. M. Nickell. For particulars, write to *Mrs. G. M. Nickell, Millboro, Va.*

Obituary Record.

Dr. George Alexander DeSantos Saxe,

A graduate of the Medical Department of Columbia University, in 1898, died of heart disease at his home in New York City, September 11. He was instructor in Genito-Urinary Surgery at the New York Post-Graduate Medical School and Hospital, and was prominently known in the medical profession as the author of several text-books.

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Original Communications.

TREATMENT OF TYPHOID FEVER.*

By R. T. STYLL, M. D., Newport News, Va.

The art of rational treatment may be said to attain its fullest development in typhoid fever. The therapeutic lessons which may be learned by attentive observation of a series of cases of this disease are endless, and an intelligent acquaintance with all the principles of treatment will be demanded of the practitioner. Expectant treatment exhibits here its most striking example. Here expectant treatment will be found to consist of infinitely more than simple waiting for the infection to exhaust itself. In this disease we learn the importance of constant attention to individual disorders, such as headache, diarrhea, and delirium; the pathological significance of these must be determined. We must discover whether they find their origin in bacillary action, in toxemia, or in exhaustion of the blood or of the viscera. We should endeavor to anticipate and prevent complications, or attempt to remedy them when they occur. Recrudescence and relapse are strikingly represented in this disease. Diet and the use of alcohol demand from the practitioner most intelligent and discriminating judgment in selection and application, both as support in an exhausting disease and to counteract grave peril in hemorrhage, delirium, pulmonary congestion, and the like. By the time that a case of typhoid fever comes under the observation of the general practitioner it is too late to think of prevention. Here in the beginning I wish to be understood as meaning by the term typhoid fever that infectious disease produced by the bacillus typhosus, its toxins and toxalbumins, as distinguished

from that group of infectious diseases caused by organisms intermediate between Eberth's bacillus and the bacillus coli communis. Typhoid fever being of bacillary origin, it would appear at first sight that the so-called antiseptic treatment would be rationally indicated as it is in the class of diseases just mentioned. But as it is certain that the bacilli do not flourish in the intestines, but in the substance of their walls, it is useless to attempt their destruction by this means. The method of treatment and prevention by means of the vaccines now under investigation and experimentation holds promise of brilliant results, and it is to be hoped will soon be at the disposal of the physician in civil practice. The prevalence of paratyphoid bacteriae everywhere, in meats, especially pork, or in other external contaminations of food stuffs, and their saprophytic existence in man, producing as they do an infectious fever so closely resembling true typhoid in its clinical history, call for and justify the use of intestinal and general antiseptics. The prevention of the spread of typhoid fever is a subject of public health rather than therapeutics. Yet it is the duty of the attendant physician to assist in this direction by thoroughly destroying the bacilli before disposing of the motions, urine, and sputa lest they be carried into some water supply; to change the linen and bed clothes frequently, and to disinfect every portion of them that has been soiled.

The earliest pathological events which occur in typhoid fever are the invasion of the intestinal walls by the bacilli, and the local resistance offered to them by the phagocytosis and vascular changes in the tissues. In these we have a natural provision on which we can rely for assistance. Here a struggle is maintained between the pathogenetic and the recuperative forces. If the bacilli and their products prove victorious, a severe inflammatory process is the result, in the forms of sloughing and ulceration,

*This paper was prepared by Dr. Syll as a part of the Symposium on Typhoid Fever, to be read before the meeting of the Medical Society of Virginia, at Richmond, October 24-27, 1911. After his death it was handed to us for publication, coming from his widow through Dr. Clarence Porter Jones.

and possibly proceeding to hemorrhage, perforation and peritonitis. In the majority of cases cicatrization follows ulceration, and repair is complete. Phagocytosis and the inflammatory process may be successful from the beginning, then the changes in Peyer's patches and the solitary follicles do not go beyond the stage of infiltration, and the destructive effects of the micro-organisms and their toxins are prevented. The essential problem to the therapist is how to assist this provision for recuperation. It can not be assisted by directly attacking the bacilli in the wall of the intestine. We have no specific for typhoid fever. We are compelled to resort to the general principles for treating inflammation, and we find that these are now universally followed. Rest is the first end to be secured. The patient should be at once confined to bed; he should be relieved of every mechanical effort by the nurse; the correct use of the bed pan is imperative. Physiological rest of the bowels is a necessity. Routine purgation should be avoided. Constipation should be relieved by a mild aperient or an enema. Food should be of such kind and quantity as will leave the least residue of undigested substance in the blood. The stools must be examined daily to ascertain whether they contain undigested matter. Typhoidal, like every other kind of inflammation, demands removal of the products, such as toxins, dead leucocytes, tissue debris, typhoid bacilli, and any other pathogenetic and fermentative organisms. To aid this we must refrain from interference with the daily evacuations, should they not exceed four.

A very necessary condition for the repair of an inflamed or ulcerated surface is cleanliness. Regular evacuations ought to be sufficient for this purpose, as in health. Disinfectants introduced into the bowel do actually reduce the severity of the local symptoms and signs, and improve the general conditions to such a degree and in such a manner as may be accounted for in this way. Intestinal antiseptics should be recommended with this object in view. They are undoubtedly useful to destroy locally toxins, the septic organisms which accompany them, and the agents of putrefaction often associated with incorrect feeding, which they are perfectly calculated to control.

While most of the typhoid bacilli remain to multiply in the wall of the bowel, others pass away with the lymphatic stream to the mesenteric glands and to the blood, which becomes

altered, and which deposits the micro-organisms in different parts of the body, where they set up local changes. They are finally eliminated, if not as bacilli themselves, certainly as their products, the more rapidly by therapeutic means. The conditions of success in this direction are: free use of fluids, thorough ventilation, and scrupulous attention to the skin.

The clinical phenomena of typhoid fever are numerous and complex, and are uncertain and possibly dangerous guides to treatment. The first principle to be observed in the treatment of the disease is to interpret the pathological significance of the phenomena before we attempt to treat them. Most of the clinical characters of typhoid fever appear to be manifestations of the local and general actions of the typhoid bacilli and other micro-organisms and their toxic products on the different organs and functions. Pyrexia accounts for part of the phenomena; so do the local lesions, both in the bowel and lymphatic system, spleen, liver, and other viscera independently of their specific cause. In every case not only the pathological significance of the symptom, but the personal factor and the actual necessity for interference in any form must be determined. When treatment is instituted, it must always be planned in strict conformity with the indications derived from our knowledge of the pathogeny of typhoid fever and in subordination to them.

Let us first consider the principal local symptoms of this disease—diarrhœa, constipation, and abdominal distention. Whatever its origin, diarrhœa is one of the common causes of exhaustion, and should always be considered of serious import. Diarrhœa ought to be treated on the same rational principle in typhoid fever as in its other pathological relations. It may proceed from two different causes, and call for two different line of treatment. The first of these—indigestion—should be corrected by revision of diet, after careful examination of the abdomen and the stools. The other common cause of the diarrhœa of typhoid fever is severe catarrh of the mucous membrane of the bowels in association with the morbid process and its products. Strict diet is not less necessary here than the former case; but medicinal remedies are also demanded, including opium, by mouth or rectum, vegetable astringents in combination with it, and possibly acetate lead.

Constipation is harmful, both mechanically to the inflamed bowels and physiologically by

provoking peristaltic unrest. It should be treated by correction of diet, the use of aperients and enemas. Tympanites being the result of accumulation of the gases of decomposition or fermentation in a portion of the intestines weakened by the typhoidal process, also demands a reconsideration of the diet. Turpentine, either internally or by stupes, may give relief.

Turpentine is the only remedy which has proven of much service in meteorism, and its success may be accounted for by regarding this condition as an evidence of paresis of the bowel produced by toxic agents in the blood. On the other hand, it should not be forgotten the gaseous distension is often the result of treatment, and ought to be prevented by revising both the diet and drugs used in treatment.

The great therapeutic problem of the principles on which fever ought to be treated has been chiefly studied in typhoid fever. Pyrexia is variously dealt with. When below 103 treatment is confined to attention to the skin, thirst, ventilation, and the temperature of the room. When the thermometer records higher bodily temperature, these should be assisted by practicing refrigeration. Systematic bathing has unquestionably reduced the mortality of typhoid fever. The tongue, heart and pulse are valuable guides to the constitutional disturbances associated with the fever, and to the effect of remedies on it.

Bronchial catarrh may be usually left to itself.

The headache of the first week calls for either cold or warm applications to the scalp, removal of the hair, quiet, protection from the light, and cool sponging. If it be intense, anti-pyrine, caffeine, bromides or morphine may be given.

Delirium must be treated by moral control, complete freedom from excitement, unremitting attention to regular feeding, the discriminating use of alcoholic stimulants, and such drugs as opium, chloral hydrate and the bromides in various combinations. Delirium and the other nervous symptoms of the typhoid state, including somnolence, coma, coma-vigil, tremors, subsultus tendinum and carphology, may be most successfully relieved by refrigeration. Under these circumstances the bladder demands special watching.

Fever demands a sufficient supply of food to support life in the presence of a wasting, de-

structive and debilitating process. The diet must be nutritious and abundant, and it must be presented in a form that the patient will cheerfully take, that is, the form of fluids. The ready guides to the fitness and success of the diet in typhoid fever are the number and character of the motions, and the physical signs over the abdomen. These are the true practical guides to the best diet in typhoid fever.

It must be clearly understood that stimulants are by no means necessarily to be employed in typhoid fever. The indications for and against their use may be stated as follows, the quantity used being in proportion to the severity of the symptoms:

"Indications for the Use of Alcoholic Stimulants.—Pulse over 120, irregular, or intermittent, very soft, very feeble. Heart: Impulse feeble or imperceptible; disappearance of the first sound. Tongue: Dry, brown, raw, fissured. Nervous and muscular systems: Muttering delirium, coma, coma-vigil, tremors, subsultus, carphology. Food: Badly taken or vomited. Diarrhœa: Severe. Skin: Moist. Age: Older subjects. Habits: Alcoholism.

"Indications Against Alcoholic Stimulants.—Stimulants are unnecessary, and not to be ordered, in the opposite conditions of pulse, tongue and other guides to those just enumerated."

Somnolence is a common phenomena in typhoid fever, and should not be interfered with beyond rousing the patient at regular intervals to be fed. Insomnia is very distressing, accompanied by headache during the first week.

In every case of typhoid fever the personal factor must be estimated and respected. The ability to withstand the toxic action of the typhoid product is very differently possessed by different individuals, according to inherited or acquired vitality, at different ages and under different circumstances, as well as in relation to their power of assimilating nourishment. Age and sex, temperament and occupation, markedly influence the treatment of typhoid fever, especially the nervous phenomena. Of the different habits alcoholism has most influence on the symptoms and on treatment.

"A syringe of antitoxin is more efficacious in a case of diphtheria than a month of nursing," and "giving antitoxin is as certain in its results as pouring water on a fire, and it is just as important to do it early."

"LEST WE NEGLECT."*

By CHAS. O'H. LAUGHINGHOUSE, M. D., Greenville, N. C.

I have been a frequent attendant at society meetings, and have been compelled while there to listen so many times to the minutiae of the temperature, pulse and respiration of an uneventful typhoid fever, and have had my soul harrowed so near the limit of control by the dramatic description of the waning pains of primiparae, and have seen the abdomen opened so often with the usual antiseptic precautions, that I have decided to leave my clinical experiences at home and direct your attention to just a thought—a thought expressed by a warning adage so old that its origin goes back to where the memory of man knoweth not; but not too old to be frequently and forcibly impressed upon us all—the wisest as well as the weakest. Would that my wisdom, example, and gift of speech, were sufficient to keep constantly, and pre-eminently in your minds the adage—"Lest We Neglect."

As late as the nineteenth century, 10 per cent. of England's people bore the marks of small-pox. North Carolina had a thousand cases of this disease during the year 1909, and I have data to show that the old North State is neither better nor worse than are Virginia and South Carolina.

Germany, taking advantage of Jenner's gift to the world, has by systematic vaccination and revaccination rendered her people immune, proven by the fact that no case of small-pox has occurred within German boundaries in the last few years, barring those imported. What is the matter with us? The State has a compulsory vaccination law, so constructed as to put the burden of its enforcement on her physicians. The educational forces from the country school teacher, "God Bless Her," to the State Superintendent of Public Instruction, is persistently forcing vaccination by leading pupils and parents into a knowledge of its necessity. If every individual doctor, backed up by every other doctor with whom he touches elbows, would issue the ultimatum that vaccination must be had, small-pox obituary would be written. *Are we neglecting this?*

Pasteur's and Lister's dynamo to medical progress has made limitless the confines of surgery by enabling us to enter with safety

those portions of the body on which hitherto had been written "Abandon hope, all ye who enter here." Yet, I knew a furuncle, incised with a scalpel previously infected by use in a case of phlegmonous erysipelas, to inoculate and kill one of North Carolina's foremost jurists—and this was done by the hand of a licensed doctor.

None of us would refer our abdominal or cerebral cases to a surgeon who was not manually, mentally, yes, anatomically proficient in asepsis; yet, some physicians will habitually do minor and oftentimes major surgery with no thought of asepsis other than a bichloride tablet, in a dirty basin, filled with dirty water.

The proper observance of the hygiene of pregnancy, coupled with asepsis in the management of labor, has wrested from child-bearing most of its danger, and much of its mental anguish; yet, many men who very properly hold up their hands in horror at the thought of criminal abortion, will, with their own fingers, neglectfully produce puerperal infection, invalidising and sometimes killing the good women of our land. What a sin against the profession, against motherhood and against God! Neglect, neglect, exasperating, lazy, unpardonable neglect, that neglect which is responsible for most of the crime committed against humanity in the name of medicine—explains the disease and death following the wake of the child-bearers of to-day.

While the germ-theory has lifted surgery and obstetrics from the sphere of the mechanic and made them guiding stars in the firmament of science, it has not done less for the infectious diseases. It is the very life of that great movement whose power is conscripting men and women from every condition of society and organizing them into a world-wide army, that in hamlet and city is preventing the Great White Plague.

North Carolina has a Laboratory of Hygiene that examines not only sputum, but blood, feces and urine free of charge, thereby giving the key to early diagnosis, the *sine qua non* of treatment and prevention. The State has also a sanitarium operated for the purpose of teaching, not only the banker, but the beggar, the secret of protecting himself and others against this disease. Are we using these institutions in our personal work? Are we making their existence and their purposes common knowledge in our own communities? Are we convincing folks—folks that cannot be taught except by

*Read before the Seaboard Medical Association, at Kinston, N. C., December 6-8, 1910.

word of mouth—that consumption is infectious and that a few simple practices tend to its prevention?

Tuberculosis enjoys the distinction of holding first place in the death rate of the world, but if the graves of the little folks alone were counted, consumption would yield her leadership to whooping-cough and measles. Parents are still converts to the erroneous belief that these diseases are the rightful privileges of childhood, and many deplore when their children are fortunate enough to escape.

Dr. Cromin, of New York, maintains that in a school population of 650,000, 30 per cent. of the children were two years behind their proper classes, and that 95 per cent. of these backward children were so because of defects of eye, ear, nose and throat. Have you ever thought how constantly the infectious diseases of childhood affect the special senses? Are we forgetting the sacred and patriotic service due these children, thereby neglecting the very hub of vitality's conservation?

I cannot pass infectious and contagious diseases until I bring to your minds the lusty youth who comes to us, rather proudly, exhibiting his first cases of gonorrhœa. Do we convince him of his condition? Do we caution him lest he render helpless her who would be his helpmate, and render sterile her who would be the mother of his children?

In spite of the lethargy of the medical profession, North Carolina has increased her appropriations to public health from \$100 in 1877 to \$8,000 in 1909. The Legislature gave us in addition free diphtheria antitoxin for the indigent, improved the usefulness of the State Laboratory of Hygiene, passed a vital statistics law, completed and is maintaining the Tuberculosis Sanitarium at Montrose.

The Medical Society of the State has appointed a Joint Committee on Public Policy and Health Legislation, who hope to procure from the next Legislature an increase of the appropriation to public health from \$8,000 to \$25,000, and, in addition, a strong effort will be put forth to make the State High School Certificate or its equal a preliminary requirement to the examination for license to practice medicine in North Carolina. The Legislature meets in January. "Take Heed Lest We Neglect" not only to inform, but to convert our own individual legislators to these and others of the State's sanitary needs.

These thoughts may appear puerile to the minds of men who have their attention taken up with what they deem greater things, but he who prevents, renders a service just as dignified and greater, though less spectacular than he who successfully evacuates it. He who prevents infection and contagion is worth more to the world than the great army of physicians who feast on prevention's neglect. He who takes a crippled child and removes from his development the shackles of disease, renders a service to his world worthy of the Hosannas of not only men but angels.

It is said that general practice has been gradually encroached upon until it has dwindled into nothing more than a directory, pointing the way of disease to the various specialties, but to the physician with an energy and a conscience that will properly respond to the adage "Lest We Neglect," the field of general practice has in it enough and more to tax the strength of Sampson, the wisdom of Solomon, the patience, the goodness and the greatness of the Man of Galilee.

A man once left his home in the quest of silver; time brought him back weary and hopeless from a fruitless search. To his surprise, in wandering through his long deserted house, he found the knobs on all its doors wrought from sterling silver. Look for opportunities to satisfy your ambitions, and realize your ideals, and you will find them right at home. Your own community—that is the field in which to spend your strength.

Pasteur could not have changed an art to a science; Koch could not have shown the power of his bacilli; Reed could not have rid Cuba of the scourge of yellow fever; Gorgas could not change Panama from a quagmire of disease to a sanitary land of wealth and beauty; Behring could not have saved thousands from diphtheria; Stiles would not be checking the ravages of hook-worms. The Legislature of North Carolina will not have the knowledge or the nerve to vote sufficient appropriations to sanitation, but for the family doctor in his own little neck of the woods, practicing asepsis, teaching the infection of consumption, procuring pure water, correcting soil pollution, preaching the value of drainage, forcing the use of screens, injecting antitoxin, giving thymol, convincing his own legislator that appropriations for the advancement of medical science are not only constructive, but

economical, glorious, and immediately necessary.

"Honor and fame from no condition rise,
Act well your part, there all the honor lies."

ON THE RADICAL REMOVAL OF THE CONDITIONS CAUSING ARTERIAL CHANGES LEADING TO NON-PSYCHOGENIC DISTURBANCES OF THE NERVOUS SYSTEM.—CASES.*

By TOM A. WILLIAMS, MB., CM., Edin., Washington, D. C.

Memb. Corresp. Socs. de Neurol. et de Psychol. de Paris; Neurologist to Epiphany Free Dispensary, etc.

- I.—The "Neurasthenia" of Sclerogenetic Toxicosis Without Very High Blood Pressure.
- II.—Diagnosis of This State by Neurological Symptoms and Signs.
- III.—Cases—(1) Focal Epilepsy from Arterial Changes. (2) Incipient Presenile Melancholia. (3) Metabolic Psychasthenia.
- IV.—Diet Most Important Element of Successful Treatment.

Whether persistent high blood pressure is itself the cause of arteriosclerosis or whether it is only another effect of toxicosis which degenerates the arteries is still a problem.

We now know that sclerosis of the arteries occurs in some subjects without a marked rise of blood pressure (Councilman). It is in these cases that we have to rely upon other signs for a diagnosis, more especially when nephritis has not occurred. It is in the nervous system that these reveal themselves earliest; and it is unfortunate that sclerogenetic toxic states are so often overlooked by physicians on account of the facility with which it has been the habit to label "neurasthenia" the varying symptoms in the causation of which circumscribed lesions of the nervous system can be excluded.

It needs to be reiterated that there is no nosological entity of acquired neurasthenia, which is only a rather loose name for a clinical condition attributable to some definite cause or causes, generally intoxicative, such as hypo- or hyper-thyroidism deficiency of the adrenals, incipient Bright's disease, disturbances of the digestive organs, tuberculosis, syphilis, pellagra or other chronic infections, animal parasites, a poor, badly balanced or excessive diet, or the

imbibing of exogenous toxins; and, lastly, mental worry and unhappiness, which act indirectly by perverting metabolism and thus producing the toxicosis which determines neurasthenia.

It is the doctor's business to find out the causes in each case, and to remedy them. In searching for these the general practitioner may require the aid of specialists. This is particularly so where the nervous system is affected; for I am sorry to say that neurological technique has been acquired up to the present by very few of the busy men who pursue general or special practice. In illustration of these statements are reported the following cases where the gravity of the symptoms lead to an early consultation, which enabled proper treatment to be instituted in time, so that good health was quickly restored:

Case I.—A man of 64, chief architect in the Indian Service, consulted me February 10, 1910, having been sent by Dr. Philip Roy because of the recent occurrence of epileptiform convulsions with loss of consciousness.

The first attack had occurred in May, 1909, at an elevation of twelve thousand feet near Durango while he was inspecting the school buildings there. He was unconscious for half an hour. The second attack occurred shortly after, upon leaving the train in Chicago, while making for the staircase. It lasted about an hour. A third attack took place that July in his office, lasting one and a half hours. The fourth and last had occurred two nights before his visit to me while he was visiting a friend and sitting down. It lasted three hours.

The attacks are preceded by a creeping sensation in the left upper arm, passing slowly down to the hand, which becomes numb. In about fifteen minutes unconsciousness supervenes. The face is said to be flushed, but he is uncertain whether there are convulsions, though others have told him that there are. The duration of the attacks was only surmised.

Previous History.—Had scarlet fever at six without bad sequelæ. An active, healthy man except for two years of asthma twenty-five years before, a result of constant attacks of catarrh. It was cured by working as a farm-hand for three weeks. He smokes two cigars and a pipe a day. He took coffee and was a heavy drinker until after the attack; now he has ceased to take even tea. He has always been abstemious in eating; but has been fond of salty foods. He

*Read by title before the American Therapeutic Society.

drank "when he felt like it." Since these attacks he has had a pain over the forehead when coryza occurred. As he had read that insanity might come on from this catarrh, he was at first a little anxious about his state, but soon steeled himself against it.

The pain in the head was rather a feeling of depression and a grumbling pain like that of catarrh. The discharge was slight, and the headache disappeared when it ceased. He used to sleep quite well, but about the time of his attacks he began waking in the early morning and could not fall asleep again. This persisted.

He had been recommended to eat more, and to take fat meat, and this he has done.

Physical Examination.—*Reflexes.* Knee kick R. greater than L. Achilles reflex R. greater than L. Triceps L. greater than R. Radials equal. None markedly exaggerated. Plantar reflex is normal. The left cremaster is absent.

Sensibility.—No abnormality in lower limbs to pain, touch, temperature, nor attitudes, though the latter are sometimes wrongly named, but correctly recognized.

Arms.—Perfect localization of light touches, both segmentally and axially. Spacing sense of fingers normal. Other modalities normal except sense of attitudes poor, especially in the left hand. No hemiopia or color inversion of visual fields.

Motility.—Normal, but left fingers weaker than right. Diadocokinesis regular. Pupils contract promptly.

Psychic Functions.—He thinks his memory is weakened since the attacks. There are no disorders of speech. Emotionally, he has always been easily excited when there was a cause, and has been accustomed to occasional sadness.

Diagnosis.—The localization of the aura in the left arm and hand, along with the increase of the triceps reflex and the loss of the cremasteric, point to an organic perturbation of the sensorimotor area of the right hemisphere, probably mainly in or near the cortex of the central fissure, opposite the second frontal convolution. The cremaster-governing fibres are, of course, attacked in some other situation.

As neoplasm and granuloma were each unlikely, and as the man's age is that of arteriosclerosis, of the state preceding which the recently acquired matutinal insomnia was indicative, I believed it wise, although lacking proof, to adopt the supposition of sclerogenetic

toxicosis, and to put it to the experimental proof of therapeutics.

Treatment.—Accordingly, a diet light in proteins was ordered, and coffee and tobacco were forbidden. The result was confirmatory as the patient, one year from the consultation, remains free from attacks and insomnia, and is perfectly well able to perform his very strenuous work, often in high altitudes.

I believe that the first attack was inaugurated in consequence of an ischæmia of a part of the right Rolandic region, due to the heart, strained by the high altitude, not being able to keep full of blood a partially sclerosed vessel distributed to that area. The second attack was likewise due to a sudden demand upon the heart upon leaving the train after a very hot journey.

It is not only in the aged that the presclerotic syndrome with nervous disturbances occurs and can be removed by means of a diet low in nitrogen and purins.

Case II.—Metabolic Psychasthenia. An engineer of 38, referred by Dr. Atkinson, powerful, energetic man, formerly accustomed to active work, began to be unable to concentrate upon the office work to which he had confined himself for over three months. Previous to this he had been much less active, and latterly he had been very much worried by an official inquiry into a contract for which he had been mainly responsible. For no cause known to him he feels a dread in the mornings, and an indecision in business matters is now realized to have been present several months. There was no syphilis nor any other organic disease.

He had been improved by three weeks in the woods, during which he was very somnolent, but relapsed at once upon return, and could hardly stand his morning suffering. There was no insomnia.

Physical Examination.—The reflexes were rather active, but there was no other objective change in the lower neurones; there was no amnesia; the sexual hygiene was normal. He was much depressed, and longed to go away from it all for a year, which he could well afford to do.

Treatment.—He was sent for three weeks into the mountains. This time he fully recovered on account of the light diet which he took. Breakfast and supper were fruit and milk, and his mid-day dinner was vegetables and six

ounces of meat; after a few days cereals were added morning and night.

To Attack the Cause.—As prevention excels cure, such results are better than that obtained by removal of effects by baths, electricity or chemical eliminants (diuretics, sudorifics, purgatives) or antagonists (iodides, nitrates), or still worse narcotics, hypnotics or calmatives, which only mask the disease while it progresses.

THE DIET IN ARTERIOSCLEROSIS AND NEURASTHENIA OF THE CLIMACTERIC.

To prevent the formation of toxins is both easier and more effective than to eliminate them when formed, although, of course, this can be done by stimulating the emunctories of the skin by baths, of the bowels by purgatives, or of the kidney by diuretics, or of the lungs by active exercise, or of the whole organism by electricity. The suppression of the effects of toxins by counteracting substances, such as the nitrites or iodides, is still less desirable; and no condemnation is too great for the masking of the warning symptoms by means of sedatives, such as bromides or hypnotics, and narcotics, such as chloral, morphine, alcohol or the synthetic drugs. Another measure to be reprehended is the whipping up of the body reactions by means of the strychnine or caffeine groups of alkaloids.

As the patient's ill health is due to his inability to metabolize the excess of protein which he had formerly taken with relative impunity, the indication is to see that he takes only the physiological amount, which for a person past midlife should not exceed fifty grams per day (Chittenden). At the same time calories must not be deficient, hence the carbohydrate should be abundant. In the third place, the vegetable salts must be supplied in sufficient amount for free secretory and excretory activity.

I give a sketch of a diet, which, of course, must be varied to suit individual cases:

While dressing, five to ten ounces of hot water containing ten to twenty grains of either sodium sulphate, potassium citrate, sodium phosphate or similar alkaline saline, according to the nature of the case. Half an hour later, breakfast of a *large* plate of fruit and milk or cream, followed by abundant cereal and milk with bread and butter. No meat, eggs or fish. Wait five hours. Dinner: Not more than four ounces of meat or fish, which must be quite fresh, a *very large* plate of green vegetables, potatoes sparingly, and preferably nothing more than per-

haps a taste of sweets. The evening meal, five hours later, may be a repetition of the breakfast; but for it succulent vegetables may replace the fruit, and macaroni or a similar dish may be substituted for the cereal. Thirst and hunger between whiles may be satisfied by water and fruit about one hour before a meal or during the night. The purins are avoided; so that meat juices are abstained from; and soup, which may be taken at dinner or supper, must be made entirely of vegetable food. Alcohol is forbidden, even as beef or wine. Tea, coffee, cocoa and kola must be abstained from; as, besides being closely allied to the xanthine bodies, they are toxic to the nervous and circulatory systems.

Gradually this diet is added to, an occasional egg being given at breakfast or supper; and the patient very soon learns what suits him best. Some culinary ingenuity is needed to give variety to a diet which at first appears monotonous. In this respect the tastiness of well prepared whole wheat bread is a great gain.

Gentle and regular *exercise* twice daily is a great aid to healthy metabolism; and proper calmative *baths* are most beneficial. Of course, proper *psychotherapy* to allay the patient's alarm is of great importance; besides which it teaches him the real status of his health, and provides him with the means of counteracting his mental depression by the knowledge that it has a physical source, and will pass away as this improves. Sometimes the morbid depressive ideas are somewhat fixed, and they must then be met by frequent, rational persuasion to readjust the patient's point of view. The effect of a change of environment is often only temporary, unless it is not made merely empirically. If it is made part of a psychological reconstruction and guided by the physician, it should, however, help rather than hinder the resumption of work, even in an unsatisfactory environment.

1758 K Street, N. W.

SIGNIFICANCE OF STOOLS IN SUMMER COMPLAINT.*

By A. W. CALLOWAY, M. D., Asheville, N. C.

No other clinical source has furnished such a wealth of academic and practical information in etiology and dietetics, as the bacterio-

*Read before the Buncombe County Medical Society, at Asheville, N. C., August 21, 1911.

logical, chemical and macroscopical examination of the stools of infants.

One of the great problems in summer diarrhoea in infants was to find a nutrient, which could be given at the earliest moment, and after an acute attack, without causing a recurrence of symptoms. Milk was modified in various ways, cereals and diluents added. wheys, buttermilks and albumen solutions had their trials, based on age and weight, but with no scientific adaptation until the stools were systematically investigated, to determine the actual results of digestion. By this could be shown which particular class of food was not digesting, the fats, the proteids or the carbohydrates. By microscopical and bacteriological methods, pus, blood and bacteria can be discovered, thereby enabling a more definite diagnosis and a clearer pathological picture.

The stool which may be looked for when diarrhoea is caused by an excess of proteids is foul smelling with large white curds, often containing mucus.

When there is an excess of carbohydrates, the stool is green, odor is sour, and the buttocks are scalded.

Diarrhoea caused by an excess of fats, results in greasy, shining, soapy stools with an odor like rancid butter. There are curd-like lumps which are soft like butter and soluble in ether.

It is to be understood that technically diarrhoea caused by improper food proportions is not essentially a summer diarrhoea, but, nevertheless, the association is so practical and intimate that I have included it in this paper.

In every case of summer diarrhoea, whether it be infective or not, a careful macroscopical examination of the stools must be made daily. It is indispensable, both in treatment and diagnosis.

Curds in the stools are of two kinds:—one composed of casein primarily, the other composed mainly of fat, mostly in the form of fatty acids and soaps. The casein curds vary in size from that of a bean to that of a pecan nut. They are usually white in color, firm and tough, cannot be broken up by pressure, and sink in water. They are insoluble in ether and become as hard as rocks in formalin. The fat curds are small, varying in size from that of a pinhead, to that of a pea. They vary in color from white to yellow or green, according to the general color of the move-

ment. They are easily broken up by pressure and remain in suspension in water and are unaffected by formalin.

Mucus is never present macroscopically in normal stools, but is very common in the abnormal. It does not denote any form of disease, but merely an excessive secretion of the mucous glands. When thoroughly mixed throughout the stool, it usually comes from the small intestine; when in combination with a clay-colored stool, from the duodenum; when on the outside of a constipated stool, from the rectum. Stools composed mainly or entirely of mucus and blood indicate either severe inflammation of the colon or intussusception. Undigested starch is often mistaken for mucus. The addition of iodine will turn the starch blue, but does not change the mucus.

Pus indicates severe inflammation of the large intestine, but appears later in the disease. Membrane indicates very severe inflammation of the large intestine and is rarely seen.

The presence of undigested fat may be shown roughly by rubbing some of the stool on a piece of smooth soft paper. If there is an excess of fat, the paper will have, when dry, the appearance of oiled paper. When there is an excess of neutral fat the stools are often of a creamy consistency. If the fat is largely in the form of soaps, the stools are usually clay-like, or very dry and crumbly. The reaction is highly acid, the odor rancid, like that of butyric acid.

Large tough curds in the stools is evidence of proteid or rather casein indigestion. In general, however, the stools of proteid indigestion are loose, brownish in color, alkaline in reaction and with a foul odor; they are more likely to show an excess of mucus both macroscopically and microscopically than those of either pure fat or carbohydrate indigestion. Mixed types of stools, as the products of indigestion, modified by bacterial fermentation and decomposition, are more common than the pure types alone, and are often very difficult to interpret.

To make a positive diagnosis of bacillary diarrhoea, the presence of the Shiga and Flexner organism must be demonstrated. An interesting analysis of 178 cases of infectious diarrhoea by Young,†

† "Boston Medical and Surgical Journal," March 2, 1911.

Blood was absent in 11 per cent.

Blood was present in 88 per cent.

Blood alone was present in 31 per cent.

Blood and pus was present in 56 per cent.

Pus absent in 39 per cent.

Pus present in 62 per cent.

Pus alone present in 5 per cent.

Mucus present in all cases.

Blood may be present as early as the first day of sickness, but in the majority of cases it appears from the fifth to the eighth day. Pus as a rule appears a few days later than the blood.

A bacteriological examination in a comparatively small number of cases, which clinically do not differ from the infectious type, reveals the presence of the gas bacillus. It is thought that these are the cases in which buttermilk acts so well.

The object of this brief article is not to advocate a bacteriological examination by the general practitioner. This work must be carried on by physicians in charge of hospitals for children, where there is an abundance of clinical material and superior laboratory advantages. I do, however, advocate the macroscopical examination of the napkins at our daily visits, and the application of a few chemical tests.

So often we give a change of medicine instead of a change of food, and, as a result, we have a complication of disease and simple food indigestion.

In no branch of medicine is good feeding more essential and is our knowledge more scientifically and practically applied than in the feeding of summer diarrhœa in children.

16 *Medical Building.*

HEART-BLOCK UPON AN INTERSTITIAL-NEPHRITIS.

By EDGAR W. ROBERTSON, M. D., and JOHN W. ROBERTSON, M. D., Onancock, Va.

Mr. L., aged 59, married, of a medium stature, fair complexion, white American, calls to consult me (E. W. R.). He has a persistent Fauchard's disease, as also a red, moist tongue. Has taken mercury and potassium for the last 25 years, at long or short intervals, but, notwithstanding, has good digestion, and has been an active man of business.

Family History. His father, at near 60 years of age, had atheroma of the cerebral arte-

ries, with paralysis and marked aphasia, with agraphia, with improvement following. After a few years of invalidism, being able to be out and about, went in doors a few weeks, and died unexpectedly, though under treatment.

A brother, aged 49 years, had had palpitations of the heart, with pallor, of some months duration, dying quite suddenly one night after retiring from a broken heart compensation.

His mother, at the age of 33 years, died while in labor, undelivered, after going into eclampsia one minute. He has three sisters, two of them somewhat neurasthenic, one of whom has chronic nephritis. He has three children, all in good health, the second rather robust. His wife is in good health, having recovered some years ago from a cardiac lesion, and a nasal epithelioma, which required a curettage and the use of potassium iodide.

Case History.—Since January, 1911, patient has had recurrent attacks of semi-unconsciousness, which pass off suddenly, and between which he feels well. He called on the evening of February 16, 1911, and after hearing his statement, I was about to regard the case as a vertiginous condition; but while he was standing and about to leave my room he remarked, "Had a spell then," and noticing that he was pale, I asked him to sit down. In a few moments he said it had passed off. Pulse very slow; heart arrhythmic. I examined with stethoscope, finding a mitral systolic murmur, which, I thought at the time, solved the problem. He was put on 1-4 grain tablets of digitalin, Merck's, for broken compensation, and an occasional dose of aromatic spirits of ammonia for the fainty, dizzy-like spells.

On February 26, A. M., while in church, he had an attack of syncope and a "gurgling" breathing. When I saw him he was somewhat cyanosed, with returning consciousness. I did not think then that he had had a convulsion, but after seeing more of the case, and witnessing the second spell, epileptiform, I knew that he had had the same in church previously, only it may have been less marked. I then discontinued digitalin, substituting strophanthus, etc., being more fully mentioned further on.

Urinalysis showed albumen, a few casts, and low specific gravity. He had some nausea and vomiting, being relieved by calomel. As has been shown in my notes, I perceived slowness of his pulse, but little thought of it, my mind being upon his heart. But it was only a few

days before I asked myself, why does he have this continued bradycardia? The all-round one-minute count, which was only 27 or 28, was regular, with no arrhythmia at this time. Being called rather hurriedly on March 1 for one of us to go, both went, and found him complaining of an aura of dizziness or disagreeable head symptoms, anticipating, fearfully, unconsciousness. In ten minutes he went in an epileptiform convulsion. During this seizure my junior is sure the pulse rate was 120, but afterwards he examined the heart, finding the beat only 28 per minute. On March 5th, between 9 and 10 A. M., the pulse rate for two all-round counts averaged 21 1-2 beats per minute. Being recalled for a seizure, which the nurse charts as lasting five minutes, pulse was 39, occasioned by the attempt to urinate while in the horizontal position—does not get up for anything. I found him quiet, pale, but consciousness was recovered quite rapidly. At 10:35 pulse was 36 after the convulsion, but very small. Nurse gave a hypodermic injection of morphia and atropin, as I had previously directed. However, he has never had a repetition of spasm at an interval shorter than a day. At 10.49 A. M. nurse rates the pulse "29," and at 11:30 pulse 26. So far no fever in this case. Subsequently he passed smoky colored urine, which showed albumen by heat and acid, and by "contact."

March 6, A. M.—Pulse 18 per minute, and this is the slowest rate I have found. After 5 P. M., during an attempt to urinate, he made some vague guttural sound, head rolled back in tonic convulsions, and I thought he would die, being about three minutes convulsed and ending in clonic convulsions. Apnoea for 15 to 20 seconds or more. During the spell pulse was 120, I thought, but I know it made 120 after he came out and became quiet. Ten minutes afterwards rate was 35. He said, "My heart is not palpitating like it was." I sent bromide for him to take at seven-thirty, and said I would be there in half an hour, so as to see him try again to urinate. At 10 P. M., after failing in an effort to urinate, a soft catheter was easily slipped in, drawing half a pint of urine. No more convulsions occurred until April 1.

We then proceeded to catheterize, t. i. d., using urotropin to prevent cystitis, ceasing to catheterize March 11th, when he succeeded in normal urination. On March 13th the pulse rate (for one isolated count) was 36; no temper-

ature in the case, part of the time, subnormal; but on March 17th, 5 P. M., chilliness and temperature 100.4 F. From this time to the 20th, inclusive, he had daily fever of a mild type. No cause was found for this fever, being negative for pyuria and hypostatic pneumonia. March 26th, pulse at the morning visit weaker, later descending to 27, nurse using atropine. She said he twisted his body and inquired if anything was the matter with his heart. March 27th, I impressed upon nurse, after she had confessed her lack of confidence in such a pulse, to be sure to give the atropine if there were similar symptoms. Later his condition was much improved, and pulse had gone up, the maximum 37 1-2. Note here that after the pulse had descended to 27, and two doses of atropine by mouth had been given, the pulse ran up to a higher rate, whether as a sequence or not, I do not yet know. (See special references to the Pulse, the Block, and Convulsions.)

THE CONVULSIONS UNDER CIRCUMSTANCES OF TREATMENT.

The first recognized convulsion was when the patient had been under Merck's 1-4 grain digitalin tablets t. i. d. from February 16th to 26th. This was discontinued, and other stimulants used, strophanthus, nitroglycerine, strychnine, caffeine, spartein, tentatively.

March 1st.—His second convulsion occurred with premonitions of dizziness and disagreeable head symptoms.

March 5th.—Convulsion occasioned by the attempt to urinate, in the horizontal position, however.

March 6th.—During the attempt to urinate, rolled his head back in tonic convulsions, followed by clonic. Began catheterizing, and used bromides occasionally.

On March 8th, Dr. Gordon Wilson tested the blood pressure, and advised that heart stimulants were not now needed. No more convulsions until April 1st, an interval of twenty-six days, when they came on during sleep.

On March 30th, I gave 1-200 grain of atropine every four hours for four consecutive doses, then t. i. d. for five consecutive days, later continuing until April 15th, when I discontinued. In the meantime, he had convulsions on the 8th, 9th and 10th of April. There was one more convulsion on April 16th, none since up to this date, May 15th. However, I began valerians with bromides, see treatment.

Does atropine induce convulsive seizures? I do not know, not yet. I know this, he had no convulsions after discontinuing all heart stimulants for twenty-six days. On April 1st he had recurrence of spasms after I had been using atropine regularly for three days, and for about fourteen days there were frequent recurrences until about the time I discontinued the same on April 14th, and up to this time—May 15th—none for twenty-nine days.

THE PULSE UNDER CIRCUMSTANCES OF TREATMENT, AND DURING AND IMMEDIATELY FOLLOWING CONVULSIONS.

The first rate for this pulse was 27 or 28 for March 1st; the minimum has been 18, and the maximum 128, the latter during and immediately following a convulsion. It has never gone beyond 40 or a few beats over, except during, or immediately sequent to a convulsion. My junior and I have made the rate (radial) 120 during and just after a convulsion. The nurse has made it 110, 120 and 128 as he was coming from the seizure. She notes this practical point: It has been very rapid about the time he was coming out of the spasm, then very irregular—a long pause—and then it subsides to the quiet rating. The average pulse rate from March 1st to the 17th, the antefebriile period, 15 notings was 27 plus. The daily average for the febrile period was, for 31 notings, 36 plus, this being from March 17th to the 20th, inclusive, when the fever disappeared. The average daily pulse from March 21st to 25th, inclusive—the post-febriile period—for 49 notings was 30.

On March 26th, nurse noticed that the patient twisted his body, and he inquired if there was anything the matter with his heart? The pulse ascended from 26 to the 37 1-2 rate from two doses of atropine (1-200 grain). The daily average pulse from the 26th to 29th, inclusive, before beginning the systematic use of atropine, t. i. d., was 30 1-2. The pulse for the next twelve days under atropine, t. i. d., averaged daily thus: 31, 31 1-2, 31 2-7, 31 3-4, 32 5-9, 33, 33, 32 12-13, 33, 34 8-10, 36 9-13, 34 7-10, a total average, including the approximate addition of the fractions, 33, and for four more days 33 1-2 average. (I do not count the convulsion pulse in these ratings.) The average for the first eight days, 32; the average for the last eight days, 34. Posture: Nurse notes the pulse before sitting up 31; ten minutes after, 35; and fifteen minutes later, 35.

Through the kindness of Dr. Wilson we re-

ceived a copy of the *Archives of Internal Medicine* for March 15, 1911, containing the two cases of Drs. Thayer and Peabody. In deference to their trial as to effects direct from atropine in reducing a "block," I directed the nurse to give the last dose of atropine for the night, hypodermically; rating the pulse, and in ten minutes rate again, and she found no difference. My experience with the remedy is, it works like tightening a screw, and not like driving a nail. That is, by gradations, the time being hours and days, and not seconds and minutes. Now, do I find a slipping back, or down, after several days *disuse* of atropine? The following would seem to affirm. The last dose of atropine (1-200 grain) was given at 8:30 P. M. on April 14th. On April 15th I began and 30th, inclusive, a period of sixteen days, ended a series of daily pulse averages, thus: 33, 34, 33, 33, 34, 32, 32, 31, 32, 31, 30, 30, 30, 29, 30, 29, this being for a total of 131 notings and giving an average of 31 plus. But observe, for the first eight days, 33; last eight days, 30. The answer is obvious.

THE BLOCK UNDER CIRCUMSTANCES OF TREATMENT.

My first examination of jugular ventricular beating was the first week in March. The radial pulse and the cardiac apex, aortic tricuspid and pulmonic areas, synchronous at the rate of 25. The jugular pulsation I made once 56, the other time 57. On March 8th, Dr. Gordon Wilson, of the University of Maryland Hospital, met us and made the jugular beat 72, "three to one." On March 28th, I made the second comparison, jugular and radial, 50 and 37. As this bears less relation than heretofore, it is suggestive of a "dissociation," hence typical heart block (complete). I reminded the nurse to use the atropine under the circumstances as on March 26th, pulse descending to the twenties. On March 30th, the regular systematic use of atropine (1-200 and only occasionally 1-100 grain) was begun.

April 8th, A. M.—Third estimate of jugular beating: Jugular 35 only; radial 35, exactly the same. I went over this count carefully and sure I am right. Was the block reduced? The jugular and ventricular beating have descended and ascended, and met at the rate of 35. Bradycardia only, but continue the systematic use of atropine until I know better. I continued until April 15th. On April 14th I made another jugular and radial count. I first counted the radial, and over the neck for comparison, find-

ing them almost entirely synchronous; watching carefully, possibly one little dip for the jugular. Then I counted the radial exclusively, making 35. Then I suggested that the nurse join me in the jugular count. I made it 34, she made it 32. Possibly she had counted it a full minute. I counted half and multiplied.

April 24th.—Return of the partial block. Now without atropine and since the 15th—nine days ago. To be more accurate, the nurse stands by me with watch, noting the beginning and ending of one minute: pulse, 32 1-2; jugular, 95; approximately, 3 to 1; and reflect, the same ratio of Dr. Wilson's finding, only a higher rate. So it would seem the block reverts from reduction to partial heart block, to what was first found. The "block" has apparently been benefited by the use of 1-200 grain of atropine, t. i. d., but now returns to the first findings, only this favorable change, a higher rating of propulsion. But for the seeming convulsive persistence while under atropine, I would most likely continue the remedy for "the block." But at this issue I desist for two reasons: first, my experience; secondly, the hyper-blood pressure, which it might tend to increase.

BLOOD ANALYSIS (J. W. R.).

First Estimate.—White cells, 9,800; red cells, 6,427,101. Second estimate (most carefully), hgb., 85 to 90 per cent.; red cells, 6,100,000 (anhydremia).

March 8, 1911.—Blood pressure by Dr. Gordon Wilson, with a Torsch instrument. Right arm, systolic, 185 mm.; diastolic, 155.

May 1, 1911.—(Second blood pressure by J. W. R.), Rt. arm, 145 mm.

URINALYSES

Date	Spec. Grav.	Albumen	Casts	Quantity (Ounces)	Solids (Grains)	Per Cent. Urea
Feb. 26	1013	Positive	Positive			
Mar. 8	1009	Negative				
Mar. 15	1010	Negative		48	480	
Mar. 19	1006	Negative				
Mar. 20	Positive				
Mar. 28	1017	Negative		57	959	1.40
Mar. 31	1007					
April 2	1010	Negative				
April 4	1010	Negative		54½	545	2.88
April 6	1010	Negative		57½	575	2.88
April 7	1010	Negative		58½	643½	2.20
April 8	1008	Negative		64¼	514	2.69
April 9	1010	Negative		55½	555	.91
April 10	1008	Negative	Positive			1.62
April 22	1009	Negative	Positive	45	405	Nil.
April 24	1008	Negative	Positive	62½	500	.92
April 25	1009	Negative	Positive	47	423	1.73
April 26	1010	Negative	Positive	56	567½	1.54
April 27	1010	Negative	Positive	63¼	635	1.73

No sugar found in the urine, nor indican above normal.

DIAGNOSIS.

Gould, Sahli, Musser, Wilson, Osler, all studied. As J. C. Wilson's definition and symptomatology are good, will quote him here, as also Osler, these serving as two beacon lights to the mariner "at sea" in this unique case. "Heart-block"; the Stokes-Adams syndrome. "Definition.—A condition characterized by bradycardia, with transient attacks of vertigo and syncope, and epileptiform seizures." "Symptoms.—Bradycardia is usually persistent, sometimes paroxysmal. The ventricular beats may fall to 20, or as low as 5 per minute. The pulse is usually tense. Its frequency is not increased, as under normal conditions, by posture, exercise, excitement or stimulants. A feeble venous pulsation may be detected in the right jugular synchronous with the auricular contractions," etc.

ETIOLOGY.

"Arteriosclerosis and the lues play an important part in the causation of heart-block. The lesions involve the auriculo-ventricular bundle of His, a narrow neuro-muscular band constituting the only muscular connection between the auricles and ventricles, which serves as a pathway for the stimulus by which the heart contracts from the auricles, in which it originates, to the ventricles."

I find no authority for alleging that a valvular lesion causes, or exists as an etiological factor in heart-block. Osler says: "The impulse causing the heart to beat originates at the venous end of the heart, and is transmitted in such a way that the auricles contract first, the ventricles a moment later, the impulse being propagated like a peristaltic wave through the heart walls. In passing from the auricles to the ventricles the stimulus traverses a narrow band of muscle, the only demonstrable muscular connection between the venous and arterial chambers."

He would seem also to believe in separate, or local powers. ("Dissociation.") He says: "In the dog, destruction of this bundle prevents the passage from the auricle to the ventricle of the impulse which normally causes the ventricles to contract. They immediately assume a rate of beating which is very much slower than that of the auricles, and is totally independent, as they possess their own automatic rhythmicity. Under ordinary circumstances this inherent rhythmicity cannot manifest itself because the much more rapidly beating venous end of the heart sets the pace for the sluggish arterial end.

But if the auricular impulse is blocked, the ventricles, released from the control of their normal pace-maker, assume their own rate. This condition has been called complete heart-block."

My argument against my case being a typical, *uncomplicated* Stokes-Adams syndrome is this: It has a valvular pathology. It is associated with an interstitial nephritis, shown by urinalysis, and the hyper-blood pressure; also, during and as the convulsive seizures are passing out, the pulse swings up to 120 rate. Now, if the true pathology be at the bundle of His, why, in our case, if a true or typical heart-block, should the bands that bind be only temporarily loosened in a convulsion, the rapid pulsation soon lowering? Or why should the blood paths be made to open during convulsions, if from any other obstructive, compromising barrier to the normal heart action? Therefore, I label my case Heart-Block upon an Interstitial Nephritis, and in this I would seem to have the happy concurrence of Dr. Gordon Wilson, who met us and made a physical examination in the case. I append here his notes which he was kind enough to send us:

"Physical examination: Patient is well developed, but not extremely well nourished. Complexion sallow. Pupils equal and react to light. Mucous membranes of fair color and some pyorrhea noted. Ears and nose negative upon examination. No glands palpable in the neck, and no tracheal tug. Jugular pulsation fairly well marked, and every third beat appears more forcible than the preceding two beats and the two beats following, this forcible beat occurring with the radial pulse at that time, the other beats being unaccompanied by radial pulse beat.

"Heart: Point of maximum intensity in the fifth interspace, well inside of mid-clavicular line, and percussion shows no apparent enlargement of the heart. Palpation negative. On auscultation at the apex, the first sound is replaced by a soft systolic blow, and the second sound somewhat sharper than normal. On careful listening there is heard after the two sounds described above two very faint 'ticks' which are apparently synchronous with the unaccentuated jugular beats. The systolic murmur described above is transmitted to the anterior axillary line, and also over the body of the heart. At the base both sounds are clear, but second aortic sound is somewhat accentuated.

As described above, the loud sounds of the heart are synchronous with the forcible jugular pulsation while there are no sounds, or only slight 'ticks' occurring with the other two jugular beats. The radial pulse is only felt with the loud sounds of the heart, and is synchronous, as described above, with the forcible jugular pulsation. Blood pressure (Torsch instrument) is the same in both arms, and is about 185 mm., and, apparently, the diastolic pressure is about 155 mm.

"Lungs: Negative on examination. No oedema of the extremities.

"Abdomen: No tenderness, no muscular spasm, and no masses made out; liver and spleen not palpable, although liver dulness is normal. Patella reflexes slightly exaggerated upon both sides. Plantar reflexes normal. No Babinski. No general glandular enlargement noted.

"Diagnosis: Incomplete heart-block, with chronic interstitial nephritis; mitral insufficiency."

TREATMENT.

February 26th.—Discontinued digitalin, substituting strophanthus, nitroglycerine, strychnine, caffeine, sparteine, tentatively. Used liquid diet, free use of water, recumbent posture, ice to the head, protoiodide of mercury, 10 A. M. and 10 P. M., 50 per cent. solution of potassium iodide in ascending doses from five to fifteen drops; but since gaining more light, by Dr. Gordon Wilson meeting us, and by finding hyper-blood pressure with a Torsch instrument, discontinued all heart stimulants except *pro re nata*. Finding that the convulsions came on—twice certainly—during the effort to urinate, we began the use of bromide a short time before he attempts, which plan failing, we catheterized successfully, being careful to use urotropin to prevent cystitis, and rigid aseptic technique. The catheter not required very many days. Finding a persistent low percentage of urea, almost nil at times, began "diuretin" on March 12th, but discontinued on March 20th, substituting Basham's mixture. This has been continued ever since with apparent satisfaction, certainly for the urinary output, as well as for daily quantity, but the solid elimination has been below par, and continuously so, and his urines have never shown a deposit all through the case, except for the very limited amount by the centrifuge. Nor has any treatment induced a normal solid output, beyond 50 per cent., ex-

cept once, when it reached between 900 and a 1,000 grains. The constipation is overcome by a preparation of phenolphthalein, then, cascara and soap-sud enema.

On March 20th, allowed elevation of head and shoulders in bed by pillows, and for forty minutes, with encouragement to the patient, and nurse notes no change in pulse from this propping. No trouble with his urinations. He does not know why he is lying, and questions if his bradycardia might not be a congenital one. He is not refractory, however, under treatment. He showed some questioning solicitude when for a cause the mercury and potassium iodide were temporarily discontinued—(sore gums and headache). These two remedies and Basham's mixture, and an occasional dose of atropine, as being the best heart stimulant, I felt safe in using. Latterly about April 16th, I prescribed a nervine sedative, this being about the time I dispensed with the systematic daily use of atropine, which was upon the occasion of the now last convulsive seizure. The nervine prescription was as follows:

R. Fld. Ext. Valerian..... } aa ʒ iss
 Elix. Ammon. Valerianate }
 Potass. Bromid..... ʒ i
 Water, q. s. ʒ iv

M.—Sig.: Two teaspoonfuls in a wine glass of water at 12 o'clock, or every three hours when quite nervous.

The nurse is continuing daily alcohol baths and massage. (For other therapeutic measures see Special for "Block," "Pulse," and "Convulsions.")

He is having a more extensive diet, and sits up one or two hours once or twice a day, and when the weather is favorable, on his porch. By this treatment he now seems brimming full of cheer. The most satisfactory mouth wash I have found to be Seiler's tablets in glycerine watery solution.

CONCLUSIONS.

First, a heart-block may exist in conjunction with a valvular lesion.

Second, the radial pulse rate is influenced, stimulated, by systematic use of atropine, by fever, and by convulsion, but only in the minimum by posture.

Third, there may be a tendency towards complete heart-block in a case of partial heart-block.

Fourth, there has been improvement in this case. Seizures now at longer intervals again; urea output averages an approach to the normal,

ranging from nil to hyper-normal; pulse slightly higher rate, and when not annoyed by the convulsions (the most embarrassing symptoms to him), he expresses himself as feeling well; and the days the propitious weather allows him to sit out on the porch, he seems happy.

Fifth, abundance and constancy of hyaline and granular casts, hyper-blood pressure, persistent or impending convulsions (though latterly longer interval of absence), systolic heart murmur, the chronic heart-block of uncertain age; and the too scant elimination of solids are all things to be watched. (Since writing this, the microscopic showing is better.)

Sixth, I am convinced of our diagnosis of heart-block upon an interstitial nephritis; and that the convulsions, the inharmonious heart action, the compromise, somewhat, of kidney function, are all in some way related, or based upon the "newer idea" of Bright's disease with a sclerosis—cerebral, cardiac and nephritic.

Seventh, as the trout of the brook, through devious streams by rock or bank, makes good time to his feeding ground by the extra plying of fin and tail, so the normal heart and kidneys adjust their powers to nature's demands. But a compromise of the normal structure, or function, by jeopardizing factors, gives rational cause for fears; for compensation may do for smooth waters, but not always for life's storms. The case is still under treatment. Should we lose our patient, it would most probably be in a convulsive seizure, by cardiac asthenia, by collapse, or by uremia. I picture him as a gladiator attacked by a bear, a panther, and a lion.

ADDENDUM.

Further experience and reflection. The daily average for pulse, 12 days more, being still without atropine, from May 1st to 12th, inclusive, is as follows: 29, 29, 28, 28, 28, 28, 29, 28, 28, 29, 29, 30, but varied in this; on the 10th instant, nurse rates 52 at 10 A. M., at a time when he was "a little flurried about dressing," but in thirty minutes it was down to 31. This day's average, not, however, counting this 52 rate, which was another evidence that his pulse is affected by "excitement," was about as others, 29, already noted above. The treatment was much the same, except that I substituted sodium iodide for potassium iodide, and in five-drop doses of a 25 per cent. solution. The reason for the change was the belief (Hare, for instance,) in the idea that potash was not

as eligible for prolonged use, heart-wise, as sodium.

Patient has now had exemption from convulsions 29 days consecutively; nor have there been any neuroses of head region. He feels cheerful and well; no complaint in any embarrassing degree. He seems about as well with this slow pulse as with a higher rate. He enjoys his meals, and keenly enjoys being rolled on porch and yard, and to-day, May 12th, rode a short distance to his store (not getting down), the object being a survey—as a diversion. Has seemingly gained a form of resistance, but largely dependent upon his attendants. He has improved in more ways than one, and medicine and medical counsel have done him good. He seems as likely to live indefinitely now, or more so, than three months ago; yet, with what we know of his state—his vital organs—it is wise, as his medical advisers, not to commit ourselves to his friends by instilling hope for a permanent recovery. He seems to have a metabolism ample to keep the machine going.

To-day's (May 12th) blood count gives—for red cells, 4,807,666, and hemoglobin, 95 per cent. Hence, the anhydremia is now gone, which we agree may be from his drinking more water, notwithstanding he shows a mild polyuria, 60—70 ounces daily.

Case still under treatment.

Proceedings of Societies, Etc.

AMERICAN PROCTOLOGIC SOCIETY.

(Continued from page 307.)

A *Symposium on Constipation* embracing seven different parts of subject was presented as follows:

Etiology of Constipation.

By HORACE HEATH, M. D., Denver, Colo.

Dr. Heath mentioned two groups—miscellaneous and mechanical. Under miscellaneous, the author regarded heredity as unimportant, but attention was called to the faulty instruction of children in certain families. He stated that the constipation of infancy was due to undeveloped muscles; and of old age, to inactivity and atonicity.

Under mechanical causes he considered: diet, sedentary life, abnormal positions, angulations, coloptosis, and hypertrophy of the rectal valves.

The predisposing diseases mentioned were colitis, stricture, proctitis, fissure, hemorrhoids, fistula, polypi, enlarged prostate, and malignant growths.

Physiology of Constipation.

By SAMUEL T. EARLE, M. D., Baltimore, Md.

In reviewing the Physiology of Constipation in the symposium read before the American Proctologic Society, June, 1911, Earle calls attention to the sensibility of the alimentary canal in connection with its bearing on constipation. It has been shown that the stomach and intestines are quite insensitive to tactile and thermal stimuli, but that the esophagus and anal canal are sensitive. The whole of the alimentary canal is, however, sensitive to distension, which produces at first discomfort and subsequently pain. The rectum appears to be more sensitive than the rest of the intestines to distension, so that a large fecal mass produces more discomfort when lodged in the rectum than in any other situation. As a result of this, the normal accumulation of feces in the pelvic colon is unaccompanied by any discomfort, whereas, the entry of feces into the rectum at once produces a sensation, which acts as a warning that defecation is necessary. The discomfort produced by the presence of a large mass of feces in the rectum is partly due to the pressure it exerts on the upper extremity of the sensitive anal canal. Prolonged retention of feces in the rectum leads to a blunting of its sensibility, so that comparatively little local discomfort is present in most cases of confirmed constipation. But in acute cases or cases of recent origin, in which the rectum is distended with feces, much discomfort and occasionally severe pain is experienced. On the other hand, even a very large accumulation in the pelvic colon produces little or no discomfort in the intestine itself.

A large fecal accumulation in the rectum presses directly upon the anterior primary divisions of the third, fourth and fifth sacral nerve routes, as they emerge from the sacral foramina. It may therefore lead to neuralgic pain referred to the sacrococcygeal region. It is liable to cause suffering more from its constant presence than its severity; it is often as severe when the patient lies down as when he takes exercise, but some relief follows flexion of the lumbar spine. The muscles of the but-

tocks and back of the thigh, which receive a small part of their sensory and motor supply from the third sacral nerve route, may be the seat of similar pain. Neuralgic pain or paresthesia, in the form of tingling or a sensation of heat or cold may occur, in the course of the sciatic nerve, in the back of the thigh, and occasionally the sensation of cramp in the calf is produced. Pain is also occasionally felt in the hip-joint, it receives part of its nerve supply from the third sacral nerve. The roots which supply the muscles of the front of the thigh, are situated out of reach of the distended rectum, so that in the exceptional cases in which pain is produced by constipation in this situation, it must be due to pressure exerted by a fecal mass in the iliac colon on the anterior crural nerve; and is accordingly only observed on the left side.

That these neuralgic pains are probably due to the direct presence of a large and hard mass of feces, on the sacral nerve-routes is shown by their instantaneous disappearance on completely evacuating the rectum by enemata, a form of treatment which was already advocated for sciatica by Columnius of Naples at the end of the eighteenth century.

Possibly the erections and seminal emissions, and the frequency of micturition and nocturnal incontinence, which occasionally result from large fecal accumulations in the rectum, are due to direct irritation of the third and fourth sacral nerves, and are not reflex in nature. The spasm of the sphincter ani and levator ani muscles, which has already been described as an occasional complication of the fecal impaction in the rectum, which occurs in constipation, may perhaps be in part due to pressure on the fourth sacral nerve routes.

"Neuralgia of the testicles in men and dysmenorrhea in women are sometimes increased by the direct pressure in the rectum on the nervous supply of the testicles and uterus respectively."—Arthur F. Hertz, on Constipation.

Bacteriology and Urinary Findings of Constipation.

By JOHN L. JELKS, M. D., Memphis, Tenn.

The author advances no new theories but expresses his views of the importance of both chemical and microscopical investigation in connection with clinical proctology, and the

value of these examinations in cases of atonic constipation.

He refers to the importance of either finding, or eliminating, the presence of intestinal parasites, that are known to produce lesions in the intestinal coats and ports of entry of bacteria or their toxins. He expresses the belief that the destruction wrought to the submucous structures, the infiltration of plastic material and the contracting, distorting, scarred portion of the bowel, as also the consequent destruction of, and interference with the secreting glands, their ducts and the nerve supply may become important factors in the atonic condition of some patients.

The author believes it is important to make microscopic examinations in all cases of this character, both of the crude and washed specimens, and of scrapings from the intestinal wall or from any lesion found in it. He also examines the urine chemically, and microscopically, believing this important, owing to the relationship and association of diabetes, kidney insufficiency and diseases of the kidney with cases of atonic constipation.

These examinations of the urine aid in determining the proper course of treatment, especially is this true when indicanuria, casts and sometimes traces of albumen, indicate the vicarious overwork of the tired and irritated kidneys, as also the intestinal fermentation and coprostatic auto-intoxication, which results in some cases.

The author refers to the importance also of examination of the stomach contents after test meals have been given as these may furnish in some cases a clue to etiologic factors.

Blood examinations he finds quite important in determining the amount of opsonic resistance as also for finding infections in the blood, which matters by lowering the vitality may become factors in the atonic conditions which were being discussed.

Pathology and Diagnosis of Constipation.

By Wm. M. Beach, M. D., Pittsburg, Pa.

Pathology of constipation is naturally considered under two general heads, namely:

1. Stasis due to altered secretions:
2. Stasis due to mechanical obstruction.

The first may be the result of neuroses, and acute fermentative indigestion, or a bacillary infection. The anaerobes may attack the contents of the bowel or the gut wall itself, lead-

ing to varying degrees of inflammation in the colon, as ulceration, hypertrophic and atrophic catarrh. The colon impaired functionally or traumatically leads to stasis and consecutive inhibition of the fecal excursion. Such impairment further disturbs the physiologic lines of defence against the auto-intoxications, as

- (a) the intestinal mucosa, itself;
- (b) the liver, and
- (c) the antitoxic glands.

Collateral with these phenomena in constipation, are such factors as cholelithiasis, hypochlorhydria, cholangitis and appendicitis, as altered secretions incident to coprostasis.

Mechanical obstructions to be reckoned with include:—

- 1. Enteroptosis or Glenard's disease;
- 2. Gastropptosis;
- 3. Dilatation of the colon;
- 4. Certain extra-mural and intra-mural sources of obstruction, as pelvic tumors and displacements, nephroptosis, enlarged glands, intussusception, malignant disease, etc.;
- 5. Acute angulation at the recto-sigmoid junction, hypertrophy of O'Beirne's sphincter, and stiff rectal valves;
- 6. Disease in the anal canal.

Diagnosis resolves itself into an analysis of the above conditions: to differentiate acute or chronic obstruction and the ordinary functional stasis which may also be accompanied by the various forms of colitis.

Sequelae of Constipation, Including Auto-Intoxication.

By ALFRED J. ZOBEL, M. D., San Francisco, Cal.

In this paper the writer mentions many of those conditions which seem to have their origin in chronic constipation with auto-intoxication. He states that experimental evidence has not as yet demonstrated that they actually do so, but close observation and clinical experience tend strongly to confirm the theory.

He writes that while all constipated individuals do not necessarily suffer from those symptoms ascribed to auto-intoxication, yet in his experience most patients with auto-toxic symptoms are constipated. This may be without their knowledge, and they often deny in good faith that they are so; but proctoscopic examination generally proves the sigmoid and rectum to be loaded with fecal matter.

A report is given of the proctoscopic obser-

vations made on a number of cases of hypertrophic arthritis. In almost every instance the lower bowel was found filled with a fecal mass, although most of the patients positively stated that they had had an evacuation within an hour or two previous to the time of examination. Thorough colonic flushings invariably brought about relief from pain, and in time marked improvement in their general condition.

These observations are in line with the theory advanced by various authors that arthritis deformans may be due to intestinal auto-intoxication.

Mention is made of the various muscular, arthritic, and neuralgic pains caused by absorption of toxins from the bowel. These are often misunderstood, and treatment instituted for rheumatism.

Congestion, irritation, and various disturbances, both functional and organic, of the uterus, tubes and ovaries in the female, the vesicles, urethra and prostate in the male, and the bladder in both, may result from chronic constipation. This is due both to the proximity of these organs to the lower bowel and to their close physiological relationship.

It is noted that albuminuria may arise from intestinal stasis, and mention is made of the opinion advanced by various clinicians that a nephritis may even be caused thereby.

The role of constipation with auto-intoxication as causal factors of epilepsy, neurasthenia, and various mental conditions, as claimed by certain well known and competent observers, is stated here without comment.

The influence of these conditions on the heart, blood-vessels, and the blood, and its effects on the eye, ear, nose and throat are dilated on in this paper, and in support of these statements quotations are culled from the literature that has appeared on this subject during the past five years.

The writer further briefly mentions a few more of those conditions that are supposed to arise from chronic constipation with auto-intoxication, and concludes by agreeing with the trite observation of Boardman Reed that, "when we except the exanthems, malaria, syphilis, tuberculosis, and the diseases caused by traumatism, by metallic poisons, and by a few other toxic agents or infections from without, practically all the remaining maladies which afflict us and cut short our lives are now di-

rectly or indirectly traceable to auto-intoxication."

Non-Surgical Treatment of Constipation.

By DWIGHT H. MURRAY, M. D., Syracuse, N. Y.

Dr. Murray stated that chronic constipation and its results was one of the worst of the foes to a healthful human race.

He had never known any medication to cure cases of constipation. As primary causes of all cases of constipation he considered Carelessness, Ignorance, and Laziness, to be of first importance. The whole medical profession should teach their clientele how to care for themselves, and to train their children in order that constipation could be eliminated by educational and prophylactic methods.

Medicines for the use of constipated people have increased until their number is almost countless. Advertisements which extol particular cathartics exploited by this or that pharmacist, are well-nigh bewildering.

He makes the claim that all cathartics finally leave those who use them worse than before. He does not entirely interdict the use of drugs, as there are cases where they must be used, but almost wholly for temporary relief. He says that a mistaken notion exists in the minds of the laity that the feces is composed largely of debris of food. This, however, furnishes only a comparatively small portion of the fecal mass, the larger portion being deposited in the large intestine as the ash resulting from the products of metabolism.

He mentions various exercises, massage, deep breathing, climbing, rowing, electricity, etc., as being helpful in the treatment and cure of these cases.

Sigmoid injections of pure olive oil, castor oil or medicinal paraffin oil were recommended as aids in the treatment.

He said that hours could be spent over the various drugs and methods in detail—after it all we would be obliged to say, that eternal vigilance as to regularity on the part of the patient must be exercised or a cure would not result.

The key-note of his paper is, education and regularity as to periodicity of the first daily stool. Finally he believed that the whole profession had a profound duty to perform for mankind in an educational way for emancipating the race from this insidious foe.

The Surgical Treatment of Chronic Constipation.

By LOUIS J. HIRSCHMAN, M. D., Detroit, Mich.

Constipation is divided into two great classes; the one class being due to a lack of functional activity, i. e., dietetic error, improper habit, neural or trophic influences. The other class, which some of us have been pleased to designate as obstipation includes all cases whose impaired activity is due to mechanical interference with the normal peristaltic movements and expulsive function of the bowel.

Obstipation, or obstructive constipation may be caused by:

(1) The presence of any foreign body, occlusion, contracture, hypertrophy or accumulation in the intestinal canal.

(2) Displacements, acute angulations, distensions, neoplasms, adhesions or compressions of the bowel.

(3) Developmental defects and congenital deviations from normal.

In as much as the surgical treatment of constipation, due to easily recognized local conditions, is obvious, they are dismissed with mere mention. Coloptotic constipation represents such a large percentage of cases of mechanical constipation that its discussion involves the most important field of surgery in the treatment of constipation. All patients with ptotic colons are not constipated, nor do all constipated patients suffer from coloptosis. There must be in addition to ptosis of the cecum, transverse or sigmoidal colons, a condition of functional inactivity due to atony of the bowel muscle.

Suspensions of ptotic colons by means of fixation by adhesions to the abdominal wall are unnatural and interfere with peristalsis. Restoration should be accomplished by shortening the natural support—the mesentery. Lateral anastomosis between the most dependent loops of ptotic bowel is sometimes indicated. Above all, massage, both abdominal and internal rectal, is of primary importance in restoring function, and should be used along with either dietary or hygienic measures to restore bowel function.

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

The following are abstracts of some of the principal papers read before the last meeting of

the Association, at Philadelphia, September 5-7, 1911.

PRESIDENTIAL ADDRESS.

Dr. de Kraft took for the subject of his address "The Development of High Potential Currents as Applied to Medical Uses." He traced the development of this mode of treatment from ancient times down to the present.

REPORT ON DIRECT CONTINUOUS CURRENT.

Dr. G. B. Massey, of Philadelphia, read this report. The committee feels that too little attention is still bestowed in this country on medicamental ionization with low volt currents. It is possible that we fail to obtain the full results on account of defective technique. Too little skin surface is used for the diffusion of the ions through the skin. With the parts immersed in local baths, the electrodes will not irritate the skin unduly. Instead of the baths we may employ very large electrodes of several layers of absorbent cotton wetted with the solution, over which a bandage-like strip of tin-foil may be wound, to which a thin wire is attached by simply threading it to a corner and bending the corner on itself.

REPORT ON INDUCED CURRENTS, INCLUDING ALTERNATING AND HIGH FREQUENCY CURRENTS AND APPARATUS.

Dr. Frederick M. Law, of New York, made this report. In using the D'Arsonval current the amount of dielectric has a marked influence on the therapeutic effect, the greater the amount of the dielectric the more superficial the effect and the more influence felt on the sensory nerve endings. Eddy currents are generated within the body, which act as a gentle massage. A valuable use of this current is in intestinal auto-intoxication. The use of bi-polar D'Arsonval current may be fraught with danger unless carefully performed. Dosage should be governed by the effect on the patient. The construction of the resonator has a great bearing on the effect of the discharge. Very little can be done with a small resonator.

A NOTE ON THE ELECTRICAL TREATMENT OF OBESITY.

Dr. F. Howard Humphris, of London, England, described the method of Professor Bergonié of employing electricity in the treatment of obesity in order to provoke a general exercise or stimulation of the muscles of the body. This method consists in causing the contraction of the muscles some one hundred times a minute by means of a current derived from what may

be termed an induction coil, or a coarse wire faradic, whose co-efficient of transformation is 2 or 3, the current being interrupted by means of a metronome. Rheostats are used so that each part of the body receives that amount of electricity which it can comfortably bear. The electrodes cover as large a surface of the body as possible.

STATIC CURRENTS AND APPARATUS.

Dr. Herbert F. Pitcher, of Haverhill, Mass., made a plea for the continuance of the use of static electricity. The men who claim that with the advent of the high frequency apparatus the era of the static machine is passing are either warped in their judgment, or they are ignorant of the currents and therapeutic effect of the static machine. No high potential apparatus has yet been produced which will induce the physical effects of the tissue pulsation with resulting tissue drainage.

ON THE USE OF COMPRESSED GASES FOR INCREASING THE EFFICIENCY OF THE STATIC MACHINE.

Dr. F. Howard Humphris, of London, England, read this paper. Anything which will enable the physician to charge his static machine rapidly and in all weathers, and also to increase its capacity of voltage, must be welcome. Sometime ago I conceived the idea of leading into the case some fresh air passed through sulphuric acid and ice, and removed by means of a suction pump at the other side of the case. But the simpler procedure of replacing the moist, impure air by CO₂ or liquid air I decided upon trying first. On the subject of liquid air a report will be made later. The experiments with CO₂ have been so successful that I think I may say that, given a static machine in good running order and a cylinder of CO₂ it can be made to charge in all weathers and in all climates, and, moreover, given a machine from which the current is insufficient with CO₂ the capacity and voltage can be readily increased from 20 to 30 per cent.

REPORT ON PHOTOTHERAPY.

Dr. Edward C. Titus, of New York, said the committee had endeavored to determine whether the beneficial action of phototherapy is due to heat or to light or both together. Considering the very powerful effect of certain invisible, non-caloric luminous radiations, the analgesic and soothing action of certain kinds of light, it must be admitted that their effect cannot be at-

tributed to heat, or only in a minor degree. The luminous radiation is the principal, if not the unique, element of this action. The committee recommended plans for the construction of a modern electric light bath cabinet.

ROENTGENOLOGY.

Dr. G. E. Pfahler, of Philadelphia, reviewed in detail the recent advances in roentgenography and roentgenotherapy, dwelling particularly upon the use of the X-ray in the diagnosis of abdominal conditions.

STANDARDIZATION OF PHYSICAL THERAPEUTIC MEASURES.

Dr. William Benham Snow, of New York, read this report. The wisdom of the establishment of standards for the employment of electrotherapeutic and other physical measures is demonstrated as year after year the papers read before the Association partake less of the empiric. Rational medicine demands rational standards and the universal recognition of the laws of physics and the action of physical agents upon the human organism in conformity with the various demonstrable physiologic effects and their action upon pathological conditions.

SOME OF THE THERAPEUTIC INDICATIONS OF HIGH FREQUENCY CURRENTS.

Dr. Herbert F. Pitcher, of Haverhill, Mass., outlined some of the more common conditions and diseases in which the high frequency currents are indicated.

STATIC ELECTRICITY IN NERVOUS AND MENTAL DISEASES.

Dr. J. J. Kindred, of Astoria, L. I., in this paper dwelt particularly upon the use of electricity in the relief of pain, nervous instability and brain fatigue, anterior poliomyelitis, tabes dorsalis, dementia precox, hypertension and arteriosclerosis and neurasthenia.

THE RATIONAL TREATMENT OF CARDIO-VASCULAR DISEASE.

Dr. William Benham Snow, of New York, read this paper. The rational treatment of cardio-vascular disease consists in the removal of the cause and the relief of existing conditions. If due to toxemia, the latter should be limited by evacuation with cathartics and high colonic flushings, the administration of intestinal antiseptics, and the limitation and selection of proper foods. Rowing teams in colleges should be abolished. College youths who have developed cardiac hypertrophy should be warned against

lapsing into a quiet life. In tachycardia due to hypersecretion of the thyroid, treatment of the gland by the X-ray promptly relieves the tachycardia and dyspnea in these cases. The auto-condensation method of treatment of hypertension is one of the most valuable additions to the materia medica, and may be used in all cases except where parenchymatous nephritis is present. This method has been used with uniform success, employing the couch, with a current of four or five milliamperes for twelve minutes daily or upon alternate days, or less frequently, according to indications.

BENEFITS FROM THE EMPLOYMENT OF ELECTRICITY IN GASTRO-THERAPEUTICS; CONFIRMED RESULTS AND DEDUCTIONS FROM OVER A THOUSAND CASES.

Dr. Anthony Bassler, of New York. The cases studied were uncomplicated primary cases of sensory, secretory and motor disturbances. In the hyperesthesia cases continuous galvanism with the positive pole internally is useful. In obscure enteralgias and tenderness along the colon galvanism is worthy of trial. In neurasthenias our experience has been that the high frequency and static currents are best. In the secretory cases, if no motor disturbances were present, the galvanic current was used. The best results of treatment were obtained in the myasthenic and the atonic cases.

ELIMINATION.

Dr. Charles O. Files, of Portland, Me., said that elimination has always been considered of great importance in the treatment of disease. The old methods of blood-letting, large doses of calomel and jalap, or small doses of calomel for the purpose of inducing salivation, the use of tartar emetic, cupping, blisters, setons and moxas have happily passed away. The necessity of getting the emunctories to work, of stimulating all the excretory organs, will never go out of fashion. We have in physical therapeutics means of accomplishing the desired end, without doing violence to other organs. These means are hydrotherapy, radiant light and heat, massage, electricity in many modalities, and vibration.

TREATMENT OF CONSTIPATION.

Dr. H. M. Imboden, of Clifton Springs, N. Y. Dyschezia will usually be corrected by the establishment of regular habits. Go to stool at exactly the same time each day. Hot and cold

douches to the perineum are good in some cases. The static wave current with the electrode introduced into the rectum has been very satisfactory, the treatment being given just before the hour selected for defecation. Glycerine suppositories may be used in some cases. Enemas must be used occasionally. In the class of cases where the feces pass slowly through the colon the measures to be used are diet, exercise, the interrupted continuous current, cold sitz-baths, the alternating pan douche, and deep abdominal kneading either with the hand or with the vibrator.

ENFORCED COMPENSATION.

Dr. Gustavus Werber, Washington, D. C., in this paper does not consider compensation in its usual application to designate the readjustment of the histological elements of various organs to bridge over the danger caused by morbid processes, but only in its broadest sense to include all those processes by means of which nature protects herself against the results of disease or accident. The paper is offered as a speculation as to the means of increasing our control of these forces. Among the means that have been used to this end are faith, fasting, heat, cold, drugs, sudden loss of blood, hypnotism with suggestion, physical exercise, by challenge or placing the vis on the defensive, and by anything which depresses the index of vital resistance and is followed by reaction.

Analyses, Selections, Etc.

The Treatment of Constipation.

The importance of constipation to the general practitioner is well emphasized by the fact that at the recent meeting of the American Proctologic Society the subject was treated from no less than seven different standpoints. The employment of vaccines and bacterial agents in combating this all too common, and usually unwarranted, condition of an abnormal delay to the passage of the intestinal contents from the cecum to and through the anus is of extreme interest. The normal accumulation of feces in the pelvic colon is unaccompanied by any discomfort, whereas the entry of feces into the rectum immediately produces a sensation which acts as a warning that defecation is to be performed. It is the lack of paying attention to this signal that is the great cause of constipa-

tion; and if the signal is not heeded the system quickly adapts itself to holding even large accumulations in the rectum. Hence, the regularity of time for defecation is the first essential point in the treatment of constipation.

From a study of the conditions producing constipation it will, therefore, be seen that unless actual disease exists, at times only capable of removal by a competent surgeon, it is usually the fault of the individual that the disorder is produced, and that medicines are usually worse than useless except for temporary relief. Fortunately, however, various forms of exercise, such as deep breathing and massage, will usually supply the desired relief if intelligently and regularly employed.

To treat constipation successfully when hygienic and dietetic means have failed, a study of the intestinal flora is required, for diarrhœa with its resultant formation of toxins, the so-called autointoxication, may give rise to a condition which seems to be most successfully combated by the use of living organisms or by their vaccines; and it is the increased virulence of the bacillus coli, a normal inhabitant of the intestinal tract, with which we have to deal. Even Metchnikoff admits that the beneficial result sometimes seen from the use of the bacillus bulgaricus, the lactic acid organism of sour milk, is due to the fact that its growth in the intestinal tract renders the food less available for harmful bacteria, thus preventing the formation of injurious products which, when absorbed into the system, may give rise to arteriosclerosis and many other morbid conditions.

Fenton B. Turk, of Chicago, believes (*International Clinics*, June, 1911,) that the common colon bacillus is fundamentally and primarily a pathogenic micro-organism of great virulence, and that a large proportion of diseases—both medical and surgical—are the result of an increased degree of virulence of the bacillus coli in the alimentary tract, combined with a lowered resistance or deficiency in the anti-bodies or in the fluids and tissues of the body. To reduce the virulence of the colon bacillus autogenous vaccines are required to create and increase anti-bodies, aided by the physical, mechanical treatment and general hygiene of fresh air, baths and physical exercise. Paradoxical as it may seem, the best treatment of constipation is often the proper treatment of diarrhœa, which may be done by the intelligent use of autogenous vaccines. These are prepared by Turk not by

growing the attenuated organisms of the feces, but by removing the accumulations from the lower bowel and the obtaining of cultures from the ileum or colon.

Smaller and more frequently repeated doses of the vaccines are used in acute conditions than when they have become chronic, varying from 25,000,000 every three or four days to 1,000,000,000 about ten days apart. It is not necessary to use the opsonic index, the change in the clinical symptoms together with the virulency of cultures of the bacillus coli obtained from the cecum, being used as the therapeutic guide. Serum obtained from immunized animals may also be employed.—(*Editorial, Medical Council*, October, 1911.)

What Constitutes Hyperchlorhydria.

Charles Summer Fischer, New York, believes that the diagnosis of hyperchlorhydria, considered as a diseased condition, is often made when the acidity is really normal. The standards of normal acidity have been too low, since each patient has an individual acidity which is normal, and this varies considerably. An apparently excessive secretion of acid cannot always be regarded as pathological. The normal percentage of acidity in an average stomach is higher than formerly supposed. The average acidity depends on four factors: quality and quantity of contained food, rapidity of discharge from the duodenum, and secreting capability of the organ. Attempts to permanently influence gastric secretion by diet have been failures. Abuse of the stomach is an over-rated conception. Monotonous diet usually does more harm than good. The rate of discharge of food into the intestine has an important bearing on acidity. An intelligent interpretation of all the facts concerning a given case must be added to the results of examination before a reliable diagnosis can be arrived at in any patient. Simple determination of gastric acidity is not sufficient for diagnostic purposes.—(*Medical Record*, September 2, 1911.)

The Bier Method in Primary or Secondary Agalactia.

Paul and Jean Delmas (*Bull. de la Soc. d'Obst. de Paris*, February, 1911), state that in a case of breast abscess treated by them the diseased breast became dried up during the treatment. A second inflammatory nodule ap-

pearing in the same breast, the Bier suction method was used to allay the inflammation. The treatment was successful in putting an end to the inflammation and, at the same time, caused a fresh secretion of milk, so that the infant could be nursed. In every gland, histology and experiment show that an increase in circulation causes an increase of secretion. The authors advocate the use of the Bier method in the treatment of insufficiency of milk in the breast, and in those breasts which contain no milk at all. This seems also to be the best treatment of abscesses of the breast.—(*American Journal of Obstetrics*, June, 1911.)

Toleration of the Corset.

Robert L. Dickinson, Brooklyn, says that corsets may be classed as corrective, neutral and harmful.

The average corset still shows constriction at the waist line of the form, if not of the degree of the hour-glass design.

His observation contradicts the claim that low abdominal girdling and "lifting" have taken the place of waist-line pressure. Tests show that in two-thirds of the cases there was greater pressure at the waist than lower on the abdomen, one-third being equal. In thin women neutral conditions were general. Pressures on the lower ribs still ran high. In one-half the cases all pressures ran high. The spring or gap of the corset when unhooked, gives an excellent practical measure of the amount of pressure exerted, two and a half inches being the most that should be tolerated. Comparison of the girth over the corset with that measured around the underskirt is worthless as an index of constriction. Interior tests showed little effect on increase in vaginal pressures in corseted women whose abdominal walls and pelvic floor were firm, but they indicated a marked rise in intrapelvic pressure from exertion in corseted women whose muscles are flabby and interior supports relaxed. The tight corset harms vigorous women little, weaker women greatly.

Among postures one-half were found defective, one-third good. Alteration in or change of the corset, often brought about marked improvement in attitude. A simple test consists in standing a patient with heels against a mark on the floor, and her side to the wall and noting the location of the scapula and buttock with and without the corset, and any change for the

better or worse in the center of gravity and in uprightness. Certain types of body form are particularly susceptible to defective corseting, such as the individual with the long and slender trunk.—(*Ibid.*)

Importance of Pure Food.

L. W. Johnston, Tuskegee, Ala., says that the evidences which scientific investigators have collected show that the addition of chemical preservatives to food substances is injurious to the consumer in several different ways.

1. The use of preservatives permits the use of food substances that are of inferior grade or that are not perfectly fresh.

2. The food preservatives when taken into the body must be eliminated subsequently; this operation entails extra labor on special organ or organs, and this extra labor will sooner or later lead to direct injury.

3. Many of the food preservatives are direct poisons and their constant ingestion induces chronic poisoning with its concomitant effects.

4. The food preservatives have an antifermentative effect on the different digestive ferments, especially trypsin, and thus retard digestion and interfere with assimilation.

5. The food preservatives act on the food substances in such a manner as to render them less easily digested, or even wholly indigestible, and make it necessary for the body to deal with partly digested food or deprive it altogether of nutrition, especially of nitrogenous food.

6. In consequence of the use of food preservatives, digestion and assimilation are interfered with, and the general nutrition of the body suffers through organs that are overtaxed and injured in attempting to eliminate the poisonous chemical substances, and in attempting to deal with imperfectly split food substances that may be in such a state as to preclude their utilization, especially on account of lack of digestive ferments because of the loss entailed through the destructive action of food preservatives.—(*Southern Medical Journal*, September, 1911.)

Public Hygiene and Private Practice.

In his response to the toast "The American Medical Association," Dr. Welch emphasized one fact thoroughly familiar to physicians, but not yet appreciated by the public, which should be given the widest possible circulation. He said: "Public hygiene and preventive medicine

have acquired an economic and social significance among the organized forces of civilization, but little appreciated to-day by the general public or by legislators and administrative officers of government. They occupy a field quite apart from systems and schools of medical practice." The opponents of increased governmental activities for the conservation of life are quite unable to discriminate between the practice of medicine by the individual physician and the application of demonstrated scientific facts in public hygiene. In no other way is it possible to account for the fact that efforts to increase the health functions of the Federal government have been regarded as an invasion of the personal rights of the individual. He who cannot distinguish between the treatment of an individual typhoid fever patient by an individual physician, and the removal of the cause of typhoid fever through the purification of the water-supply of a community, is still in an elementary state of education. The treatment of individual patients is not and should not be a matter of governmental concern. The correction of insanitary and unhygienic surroundings and conditions is of the highest importance to the modern state and is worthy of its utmost activities.—(*Editorial, Journal A. M. A.*, May 13, 1911.)

Book Notices.

Handbook of Suggestive Therapeutics, Applied Hypnotism, and Psychic Science.—A Manual of Practical Psychotherapy, Designed Especially for the General Practitioner of Medicine and Surgery. By HENRY S. MUNRO, M. D., Omaha, Neb. Third edition, revised and enlarged. Cloth. 8vo. 409 pages. St. Louis: C. V. Mosby Co. 1911. Price, \$4.

Suggestion has played an important part in the affairs of men for ages. Its particular effect has varied with the occasion. The showman—usually an adept with the wonders of this art—holds spell-bound large gatherings, amused at the antics of his subjects. Whatever is done is commonly carried out with an air of mystery surrounding, and the audience leaves, many feeling that it is all the result of some clever trick. Thus, these valuable measures are made common place, and have come to be regarded lightly—as a play-thing—by the public, thereby bringing it into disfavor as far as any beneficial uses are concerned. Heretofore suggestion as a therapeutic agent has been largely limited to

neurology and psychiatry. In recent years only does the medical profession seem to have given heed to the subject for its practical value in treatment of selected cases occurring in general practice, and it is chiefly to this latter and larger field that the author directs his efforts. Details of procedures to be adopted make the book of service to doctors generally. The good results claimed, as set forth in the text, are convincing evidences of the worth of this form of treatment, and whether all or only a few who follow directions are able to succeed with this method, the book will at least prove interesting in that it shows what can be accomplished by some.

Practical Medicine Series.—Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of GUSTAVUS P. HEAD, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School, and CHARLES L. MIX, A. M., M. D., Professor of Physical Diagnosis, Northwestern University Medical School. Series 1911. Vols. I and VI—General Medicine—Edited by FRANK BILLINGS, M. S., M. D., Chicago, and J. H. SALISBURY, A. M., M. D., Chicago. Vol. II—General Surgery—Edited by JOHN B. MURPHY, A. M., M. D., LL. D., Chicago. Vol. III—Eye, Ear, Nose and Throat—Edited by CASEY A. WOOD, C. M., M. D., D. C. L.; ALBERT H. ANDREWS, M. D., and GUSTAVUS P. HEAD, M. D. Vol. IV—Edited by EMILIUS C. DUDLEY, A. M., M. D., and C. VON BACHELLE, M. S., M. D. Vol. V—Obstetrics—Edited by JOSEPH B. DE LEE, A. M., M. D., with the collaboration of HERBERT M. STOWE, M. D., Chicago: Year Book Publishers. 12mo. Cloth. Volumes vary in size from 232 to 611 pages.

Each of the volumes under consideration is one of a series of ten issued at about monthly intervals, the whole number reviewing the entire field of medicine and surgery for the year prior to publication. Separate volumes may be purchased by those interested only in special subjects at prices varying from \$1.25 to \$1.50, though the series of ten—intended primarily for the general practitioner—may be had for \$10. We have so often favorably commented upon these books that we feel it is merely necessary to state that they are still being issued, and are up to their usual high standard.

Editorial.

The Medical Society of Virginia

Assembles for its forty-second annual meeting at the Jefferson Hotel, Richmond, at 8 P. M., Tuesday, October 24th, and will continue until mid-day Friday the 27th.

The first session—to which the public is invited—will be called to order by the president, Dr. O. C. Wright, of Jarratt, and will be opened with prayer by Rev. Jos. N. Latham, D. D. Judge John H. Ingram will deliver an address of welcome, which will be responded to by Dr. Rawley W. Martin, of Lynchburg. Nomination and election of new members will then be in order. Announcements for the Local Committee of Arrangements will be made by its chairman, Dr. J. Fulmer Bright, who expects to promise the visitors some good things, including a reception by Dr. Stuart McGuire on Wednesday night. Following this comes the President's Address, after which reports of officers and committees are presented. Each of these is in turn referred temporarily to the Executive Council for recommendation.

The scientific part of the program begins with report of clinical cases on the morning of the second day, Wednesday, until 11 A. M., at which hour papers of the Symposium on Typhoid Fever will be read by appointed leaders, Drs. E. G. Williams, J. J. McCormick and George K. Vanderslice. The reading and discussion of other papers on the program—about forty-five in number—are then to be taken up seriatim. The first business of the afternoon session on Thursday, after the annual report of the Executive Council, will be election of officers, standing committees, boards, councilors, etc. Unfinished and new business will be attended to between this time and installation of officers on the last day.

Richmond has heretofore been fortunate enough to have the largest attendance of any one place for society meetings, and there is reason to believe the inducements this year will be equally attractive.

Little more than one week intervenes before the meeting, so that it is up to members, who know of eligible physicians, to get busy with such parties at once and urge them to join their State Society. Applications may be sent with the initiation fee of \$2.00 either to the secretary, Dr. Paulus A. Irving, of Farmville, or to the chairman of the Membership Committee, Dr. W. D. Turner, of Smithfield.

More Practical Training Needed in Obstetrics.

In view of the recommendation last year, by a committee of the American Gynecological Society, that at least six confinement cases should be attended under supervision, by each

undergraduate, Dr. Barton Cooke Hirst, Professor of Obstetrics, University of Pennsylvania, has recently issued a letter to the secretaries of the State Medical Examining Boards, urging that more practical training be required in obstetrics by the applicant for license to practice medicine.

This movement should meet with the hearty endorsement of the entire profession, for, to the old saying, "practice makes perfect" might most fittingly be added in these especial cases "and gives us greater confidence to cope with the various difficulties to be met." There is not one of us who, in attending his first complicated obstetrical case after graduation, has not felt the need of having received more training in this line of work, in spite of the fact that he may have assisted in a comparatively large number of such cases.

The requirements urged are small indeed, when compared with those made by European schools, where attendance upon from forty to fifty cases is required of each candidate desiring license to practice. This larger number will of necessity bring the undergraduate in touch with many complications which he would possibly otherwise not have an opportunity of studying until brought face to face with them, in his private work, when it might be practically impossible for him to secure assistance. Many of our schools have done what they could to meet this emergency, but there is still room for improvement.

In this connection, it may not be amiss to state that we believe too much emphasis cannot be placed upon the good to be derived by a larger amount of practical training in every branch of medicine.

American Roentgen-Ray Society.

While the Richmond meeting of the Society held September 20-23, 1911, under the presidency of Dr. Percy Brown, of Boston, was not so largely attended as some of the former sessions, it was not surpassed by others in point of social enjoyment and the value of scientific papers and discussions presented. The local committee of arrangements, composed of Drs. A. L. Gray, C. M. Hazen and D. D. Talley, assisted by members of the medical profession and the city, filled in all the spare time between the reading of papers with delightful entertainments.

Dr. F. H. Baetjer, Baltimore, formerly

secretary of the Society, was elected president. The vice-presidents are Drs. H. W. Van Allen, Springfield, Mass.; G. M. Steele, Oshkosh, Wis.; J. H. Edmondson, Birmingham, Ala.; W. H. Eagar, Halifax, N. S., and H. E. Potter, Chicago; secretary, Dr. H. K. Pancoast, Philadelphia; treasurer, Dr. Chas. F. Bowen, Columbus, O. (re-elected); member of executive committee, Dr. A. L. Gray, Richmond; publication committee, Drs. P. M. Hickey, Detroit; Sidney Lange, Cincinnati, and David R. Bowen, Philadelphia. The next meeting will be held at Niagara Falls, during September, 1912.

The American Electro-Therapeutic Association

Held its twenty-first annual convention at Philadelphia, September 5-7, 1911, the president, Dr. Frederic de Kraft, New York, in the chair. There was a large attendance and a number of excellent papers were read.

Addresses of welcome were delivered by Mr. Gleason, secretary to the mayor of Philadelphia, and by Dr. C. B. Longenecker, president of the Philadelphia County Medical Society. Dr. Charles R. Dickson, of Toronto, responded on behalf of the Association.

Officers elected for the coming year are Dr. William D. McFee, Haverhill, Mass., president; Drs. F. Howard Humphris, London, and Geo. E. Pfahler, Philadelphia, vice-presidents; Dr. Emil Huel, treasurer, Dr. J. Willard Travell, New York, secretary; Dr. Frederick M. Law, registrar, and Drs. Frederic de Kraft, New York, and Francis B. Bishop, Washington, trustees. The next meeting will be held in Richmond, Va., during September, 1912.

Roanoke (Va.) Academy of Medicine.

There was a large attendance at the last annual meeting of the Academy, on the evening of October 2d, at which time Dr. Tom A. Williams, of Washington, D. C., read an interesting paper on Tumors of the Brain.

The election of officers for the ensuing year resulted as follows: President, Dr. E. P. Tompkins; vice-presidents, Drs. T. D. Armistead, Roanoke, and R. H. Garthright, Vinton; secretary, Dr. L. G. Richards, and treasurer, Dr. J. W. Preston.

"He Being Dead, Yet Speaketh."

At the meeting of the Medical Society of Virginia at Norfolk, during October, 1910, Dr. Richard T. Styll was selected to read a

paper on The Treatment of Typhoid Fever, as a part of the Symposium, for the meeting in Richmond this month. His untimely death on April 10th, of this year, made it necessary for the Executive Council to appoint another leader, though the task assigned him had already been practically completed. The paper is presented as the leading article of this issue of the *Semi-Monthly*, and will be found to exemplify some characteristics of its author—promptness, clearness and directness, with a vigorous mind.

Medical Corps, Virginia Volunteers.

Lieutenant-Colonel Junius F. Lynch, Surgeon General of Virginia, announces the following items of interest in connection with the Medical Corps, Virginia Volunteers:

Dr. A. A. Marsteller, Richmond, Va., has been commissioned captain in the Medical Corps, and assigned to the First Regiment Infantry, *vice* Captain Julian M. Robinson, Danville, Va., resigned.

Dr. Sam W. Maphis, Warrenton, Va., has been commissioned captain in the Medical Corps, and assigned to the Second Regiment Infantry, *vice* Captain L. H. Hansbrough, Front Royal, Va., resigned.

Dr. Herbert R. Drewry, Norfolk, Va., has been commissioned captain in the Medical Corps, and assigned to the Fourth Regiment Infantry, *vice* Captain Israel Brown, promoted.

Major Israel Brown and Captain Frank H. Hancock, Medical Corps, were appointed delegates to the meeting of the Association of Military Surgeons of the United States held in Milwaukee, Wis., September 23d to 26th.

An order has been issued by the Surgeon-General requiring all hospital corps detachments to be enlisted to the maximum, *i. e.*, 24 men.

Dr. C. R. Dufour,

Who has charge of diseases of the eye, ear, nose and throat at Georgetown University Hospital, Washington, D. C., has opened a branch office for the practice of his specialties at 722 King Street, Alexandria, Va. He will see patients at this office on Mondays, Wednesdays and Fridays from 1 to 3:30 P. M.

Dr. Dufour was one of the successful applicants before the last meeting of the Medical Examining Board of Virginia.

State Normal and Industrial School for Women.

Dr. Anne Humphreys, formerly of Norfolk, Va., has recently accepted the position as resident physician to this new school in Fredericksburg, Va.

Dr. C. Mason Smith, of Fredericksburg, secretary of the Rappahannock Valley Medical Association, will be consulting physician to the school.

Clinical Lectures on Diseases of the Skin.

The Governors of the New York Skin and Cancer Hospital announce that Dr. L. Duncan Bulkley, of New York, will give a thirteenth series of *Clinical Lectures on Diseases of the Skin* in the Out-Patient Hall of the Hospital, on Wednesday afternoons from November 1st to December 20, 1911. This course will be free to the medical profession.

Dr. E. T. Brady,

Formerly of Abingdon, Va., recently tendered Governor Mann his resignation as a member of the Virginia State Board of Medical Examiners, owing to his removal to Roanoke, which is in another Congressional District. His successor has not yet been announced.

Captain Arthur M. Whaley, U. S. A.,

Has been detailed to represent the Medical Department of the Army at the Sixteenth Annual Session of the Seaboard Medical Association of Virginia and North Carolina, to be held at Newport News, Va., December 5-7, 1911.

Dr. J. Kennedy Corss,

Newport News, Va., and Mrs. Corss, recently left for an extended European trip. While abroad, Dr. Corss will visit some of the large hospitals and clinics.

Dr. Karl Blackwell

Was recently appointed Assistant Medical Inspector of the Public Schools of Richmond, Va., *vice* Dr. C. M. Baggary, deceased.

Dr. George Ben Johnston,

Of Richmond, who has recently been touring the New England States with an automobile party, will return to the city this week.

Dr. Orrin K. Phlegar,

Formerly of Crandon, Bland County, has recently moved to Radford, Va.

Dr. Julian W. Sloan,

Of Richmond, has removed his offices to 1600 Park Avenue.

Dr. J. A. Hillsman,

Richmond, who has recently been very ill, we are glad to note, is now much improved.

Location Wanted—Physician wants a good location in Virginia. Small town or rural district preferred. Please state when answering, county where located. Address "C. Z.," care *Virginia Medical Semi-Monthly*.

For Sale or Exchange—\$2,000 practice; \$1,200 of this is contract and paid monthly. Practice located in Piedmont Virginia. Competition light. Telephone service and electric lights for office free. No real estate will be sold or bought. References given and required. For full particulars, address "H 15," care *Virginia Medical Semi-Monthly*.

For Sale—Physician's home and practice, thickly settled, prosperous community. Piedmont Virginia. Modern house, 30-acre farm. High school and railway station within 500 yards; 35 minute drive to city of 25,000. Unopposed practice worth \$3,000 annually. Three horses, buggies, 2 cows, farm tools. Price, \$6,000. To quick purchaser, long credit for half the price. Real estate worth the price. Address "T. R.," care *Virginia Medical Semi-Monthly*.

For Sale—Having decided to specialize on Disease of Children, I wish a competent man to take my practice in a Virginia town, in the most beautiful portion of the Shenandoah Valley. Address "W. L.," care this *Journal*.

Obituary Record.

Dr. James Alfred Pettit.

Born about forty years ago at Roseland, Nelson County, Va., which place has always

been his home, was killed at Lovingson, September 25th, as the result of a grudge cherished by a man supposed to be crazy. After the usual preliminary academic education, Dr. Pettit entered the University of Virginia, from which institution he graduated in medicine in 1896. He became a member of the Medical Society of Virginia in 1897. He was prominent in his profession, and was one of the most highly esteemed and beloved citizens of his section. He was also prominent in the politics of his county, being a member of the Democratic Committee of Nelson County, and was a Colonel on Governor Mann's staff. His funeral was conducted with Masonic and military honors. His widow, formerly Miss Louise Fitzpatrick, of Nelson County, and three children survive him.

Dr. Carroll Moore Baggary.

The notice given of the death of Dr. Baggary in our last issue would be incomplete without announcement of the notable tribute paid him by Memorial services held in the Auditorium of the Richmond College, September 27th. The speakers represented the several colleges with which he had been identified as instructor, as well as those from which he had graduated. Dr. Joseph A. White, with whom the deceased had been intimately associated for several years, also spoke with great feeling and admiration. It is seldom given so young a man to enjoy the love and respect of such a representative body of men.

Dr. Napoleon B. Nevitt,

Died at his home in Accotink, Va., September 25th, aged 81 years. Born at Newington, Fairfax County, Va., he received his early education of private tutors, and later studied medicine at the University of Maryland, graduating as doctor of medicine in 1857. When the War Between the States occurred, he entered the Confederate service as an assistant surgeon, later being promoted to the rank of surgeon. He became a member of the Medical Society of Virginia in 1873, and honorary member of same in 1906. Having spent practically all of his life in Fairfax County, Dr. Nevitt was one of the best known and most highly respected men in his section of the State.

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MEDICINE, ITS FUNCTION, SCOPE AND LIMITATIONS.*

By O. C. WRIGHT, M. D., Jarratt, Va.

President Medical Society of Virginia; Member Medical Examining Board of Virginia, etc.

*Gentlemen of the Medical Society of Virginia,
Ladies and Gentlemen:*

I did not have an opportunity at our last meeting at Norfolk to thank this Society for the great honor conferred upon me there, and now that an occasion presents itself words are inadequate to express my gratitude for, and appreciation of, its action. To be president of the leading medical society in the greatest State in the Union is an honor of which any doctor, however gifted, might well be proud. To be chosen the official head of an organization of the best talent of the medical profession of Virginia, the birthplace of American liberty, the State which gave to the world such characters as Washington, Jefferson, Madison, Marshall, Lee, Jackson and a host of others scarcely less renowned, is a distinction which I did not merit, which I know I did not solicit, and which I certainly did not expect, but coming as it did, one which I could not reject, however much I may have doubted the wisdom of your choice. A mere glance at the list convinced me that I could not hope to match the work of my illustrious predecessors, but drawing inspiration from their very names and deeds and realizing that honest endeavor and faithful service counted for much, I assumed my duties with a determination to give for one year the best that was in me to the Medical Society of Virginia. When my labors shall have ended, if I have even in a very limited manner approached the high standard so long maintained by those who have preceded me, I shall be much gratified.

*Address of the President before the forty-second annual meeting of the Medical Society of Virginia, at Richmond, October 24-27, 1911.

In casting about for a subject upon which to base my remarks to-night, no scarcity of eligibles was found, but decidedly more difficulty was encountered in treating it in a manner befitting an occasion like this—in a way entertaining to the profession and at the same time discharging my obligation to the lay members of the audience, whose ear drums do not readily respond to the not altogether euphonious notes of medical phraseology. In the preparation of this address I was not unmindful of the fact that a duty to our guests, who have honored us with their presence to-night, demanded a special effort to meet the latter indication, though not successful in the first. Should I prove unequal to the task of accomplishing both purposes, the interesting and instructive program which is to follow, I am sure, will amply compensate the profession for any disappointment incident to my delinquencies, and I shall trust to that same generosity which has always characterized the attitude of this Society to me, to overlook all imperfections.

In discussing "Medicine, Its Function, Scope and Limitations," the theme at least should appeal to all, but before touching upon the subject proper permit me to direct your attention for a few minutes to some needs of the Society and demands upon its fellows. Though the affairs of the organization are now in a satisfactory condition, I would remind you that conditions have changed, and that the work and responsibility voluntarily assumed and so long borne by one man must be divided among the individual members. With the passing of our beloved and lamented secretary, Dr. Landon B. Edwards, the active, propelling, vitalizing force of the Society was cut off. His boundless energy, unflinching devotion and unerring judgment have steered it past all dangerous shoals and threatened disasters and launched it upon smoother seas and a more expansive domain. Under his leadership it has been elevated to a plane of influence and usefulness which

will compare favorably with that of any similar organization in this country. We shall miss his genial face, but will not forget him. Though dead, his work lives. This statement is made not in disparagement of our present worthy secretary or any other member of our body, nor with any purpose of assuming the function of the necrological committee, but in simple justice to our departed friend.

Not only are we called upon to take up the work of Dr. Edwards, but new problems which must be solved are constantly arising, and each year additional obligations and increasing responsibilities must be met. Medical education and medical licensure demand the constant and watchful care of our Society. The standard of preliminary and medical education is rapidly advancing everywhere, and we cannot afford to lag behind in this commendable progress. Virginia justly boasts of a superior quality of citizenship. Her people have taken high rank as leaders of thought, action and progress, and the medical profession of the State must not prove an exception. One of the first to recognize the need of and to institute a licensing board, it is a waste of time even to consider her receding from the advanced position she has taken in medical education. If the State Health Department would continue its beneficent work, perfect its plans, broaden its scope and adequately meet the constantly increasing demands upon its resources of a more enlightened public, it must have the sympathetic co-operation and active aid, not only of this organization, but of the individual members of the profession also. Medical legislation must be guarded with eternal vigilance. New cults and divers sects are constantly developing and clamoring for license, and without exception are demanding special privileges. This Society must insist and demand that all who treat human ills shall enter at a common portal. It requires no argument to show the necessity of a diagnosis to treat diseases intelligently, regardless of the methods employed; therefore, all who attempt it should be required to have some training in the fundamental branches of medicine.

Medicine, in its broader sense, is not simply the art of administering drugs, but, in addition to this minor function, embraces all known therapeutic as well as preventive measures. "It is in making life more livable, in shielding man from the unseen enemies which prey upon his body, in preserving his family, and in complet-

ing his mastery over the malignant processes of nature, that the field of medicine lies." In medicine are included curative and preventive measures, and legal medicine. The curative agents available include surgery, serums, drugs, mechanical, mental, electro- and hydro-therapeutics. As the knowledge of the causes and pathology of diseases advances, the simpler are the methods of treatment. Twenty years ago the treatment of diphtheria varied with the physician in attendance, and the extent of the pharmacopœia was the only limit to the number of remedies prescribed; now, antitoxin alone does the work. At the same period it was rare to operate for appendicitis; to-day all agree that surgery is the one rational method of checking it. The scalpel has been substituted for opium and salts—two weeks of a comfortable convalescence and a complete restoration to health for an agonizing death or an after-life of invalidism, punctuated at frequent intervals with periods of pain and distress.

Of the curative methods available, surgery has a wider scope than any other—in fact, with the exception of a limited number of specifics, it is the only positively curative remedy known to science. The number of drugs possessing directly curative properties is extremely small. There are few specifics, but drugs having a fairly well-defined and constant physiological action are more numerous, and are valuable agents in the hands of trained physicians in the alleviation of pain and the relief of distressing symptoms, in their efforts to assist nature in combating disease. Here clear judgment and careful, painstaking observation are demanded. In the hands of the ignorant, be he doctor or layman, drugs are dangerous. No one should prescribe them who is not thoroughly familiar with their doses and physiological action. Their indiscriminate and reckless use is never justified.

The minute that disease fastens itself upon the body, nature offers battle and, left unhindered, usually wins. In a close fight, it is obvious to all that only the skilful should dare interfere. Serum therapy promises a wide field of usefulness, although its contributions as yet have not been numerous. The number is limited, but on account of its power for good in diphtheria, antitoxin alone cannot be estimated.

Mechanical therapeutics has its place and must be recognized. While by no means conceding to this method the claims of the osteo-

path, I assert that he who denies the value of massage in properly selected cases is unjust to his patient and profession, and must not complain when people seek relief from other sources. Mental or suggestive therapeutics is of value in the treatment of certain conditions—indeed, it is a factor in any abnormal condition. Inspire hope and confidence in your patients and his chances of recovery from even acute and dangerous diseases are increased, to say nothing of the effect upon despondent and nervous individuals, whose illness consists solely in imaginary troubles. Electro- and hydro-therapeutics, though an inviting field for the impostor, have their legitimate sphere and are of undoubted value in certain cases. The wise clinician is he who carefully and accurately diagnoses his cases and applies the remedies indicated, ever bearing in mind that his duty is to assist nature but never to interfere. The conscientious doctor is bound by no dogma or dictum, but never hesitates to prescribe that which is proven to be of service, nor to condemn that which is known to be harmful or worthless. Until medicine becomes an exact science, men will differ both in the diagnosis and treatment of diseases. Remedies are to-day heralded as efficient and to-morrow discarded for something better. Ever changing, yet always advancing, has been the history of medicine.

PREVENTIVE MEDICINE.

On the prevention of diseases alone volumes have been written, and an exhaustive treatise on this subject is beyond the scope of this paper. It has been aptly said that to accomplish any purpose, we must know what to do and how to do it. As applied to the prevention of diseases, this expresses it only in part. Science has furnished the knowledge, but for its practical application there is another and equally important factor necessary, but not yet forthcoming, namely, the full and free consent of that all powerful force, public sentiment, the final arbiter of all questions affecting the general welfare of society. Until the people are informed of the objects, aims and possibilities of preventive medicine, until they have been aroused to a realization of its importance, yes, until they are convinced that the outlay in resources necessary to produce results will be repaid with compound interest, we may expect certainly a reserved attitude on their part, if not one of direct antagonism. The early consummation of this happy condition should be

the object of our most earnest endeavor. The burden of the task is largely upon the medical man, and to my mind the physician owes no higher duty to mankind than the dissemination of knowledge pertaining to the prevention of diseases.

Methods of preventing a very large majority of infectious diseases have been amply demonstrated, but they are still prevalent. More than a century ago, Jenner gave to humanity a simple, harmless and efficient preventive of small-pox, but it is with us always. Tuberculosis, typhoid and malarial fevers belong to a class of diseases which should not exist, but to them are chargeable untold suffering, an enormous annual expenditure of money, and a majority of deaths which occur during the productive period of life. The average individual, when suffering from a dangerous or painful disease or when dissolution is threatened, will give freely of his means to gain his health and to be freed from pain, and will sacrifice his all to stay off death, but is apparently little concerned until danger is plainly in sight.

Based upon the causes for the varying attitude of people towards preventive medicine, the human family, for convenience of analysis and study, may be divided into the following classes: First, the ignorant; second, the skeptics; third, the blindly selfish; fourth, the mercenary; fifth, the careless and indifferent; sixth, those anxious and willing to render to the cause any assistance possible.

A correct estimate of the weight and influence of each class is essential to the success of those contending for a more general recognition of preventive measures. In the first class, there is abundant material worthy of an effort to secure. Enlighten them, and new alignments will be formed and certainly a fair proportion will prove efficient and congenial co-workers with the last. From the second and third classes, little may be expected. They offer no hope of developing into a factor worthy of consideration. Skeptics are not susceptible to reason, and rarely are the blind made to see. The fourth class should cause little concern. Though the instigators and promoters of the so-called "Leagues for Medical Freedom," the leaders and counsellors of the anti-vaccinationists, the free thinkers and the like, they have little weight. The days of the mercenary in medicine are numbered and none recognize it more clearly than they do; the noise they are making is but the instinctive

howl of the whipped cur. The wail of the rank and file of such bands, though more pathetic, is equally harmless. It is nothing more than the exhibition of characteristics common to all, who from indolence, indifference or other causes, have refused to move with the advancing column, and finding themselves outstripped, cry out for sympathy and comfort. Once aroused from their state of lethargy, those composing the fifth division may be depended upon to contribute their full share to the advancement of methods which science has demonstrated to be effective in lessening human ills and human woes. To those brave spirits included in the sixth or last division, humanity owes a debt of gratitude. As a result of their labors, the public is being awakened in a measure to a realization of the possibilities of intelligent and concerted efforts at the prevention of diseases. Consciously and unconsciously they are gradually arousing in the public mind a moral force which is already producing results.

Organizations for the betterment of mankind are sprouting up everywhere and all are doing excellent work. The various movements now striving for improved conditions and active in behalf of humanity generally, if perfectly coordinated and intelligently directed, will result in a great conservation of energy and resources, so necessary in obtaining maximum results at a minimum cost, thereby sooner convincing all of the value of such work and the folly of longer neglecting it. "Pasteur's visions of a world freed from the horrors of infectious diseases" will not soon be realized, but science and a more enlightened public have spoken in no uncertain terms and decreed that many of the infectious diseases now destroying thousands of human lives annually shall be banished from the face of the earth. This will be accomplished gradually, but surely. The influence and power behind this movement, while not yet all that could be desired is increasing each year and developing new strength as it progresses and will eventually gain a headway which cannot be checked. Its own momentum will carry it even against stubborn resistance. "The ultimate success of a righteous cause is inevitable if the people understand its meaning," but there are many factors which may effect the date of its final triumph. To win converts to the cause, something more than dogmatic assertions and arbitrary power is demanded. People who have taken the pains to inform themselves know so

well what could be accomplished by mutual co-operation and concerted action on the part of all, that they lose sight of the fact that other people do not know it too, and are often unjust in their censure of those who refuse to follow blindly. Human nature is very much the same the world over. People demand reasons for and proofs of an assertion from whatever source. If health departments are to go smoothly and without friction, the people must understand their object and be in sympathy with them. No laws are satisfactory if the people are ignorant of their meaning. Not in the very remote past it was an absurd notion of the profession that it was unethical to communicate medical knowledge to the public. Happily this relic of the conceit and arrogance of doctors of former days is passing away.

The art of medicine like everything else had its beginning. It probably originated with an effort to relieve some painful condition, the cause of which, if considered at all, was attributed to a visitation of Providence. From this crude beginning the great science of medicine has been evolved. "The in-born longing of man for an explanation of the mysteries surrounding him," his instinctive desire to conquer and to rule, philanthropy, prospect of financial reward and the hope of fame have each played an important part in the transition. Unable to grasp and appreciate the cause of abnormal conditions, the activities of those interested were for many centuries confined to empirical efforts at the relief from the effects of disease. Until the searchlight of science began to reveal the long hidden mysteries of disease, there was no real progress. Co-incident with the brilliant discoveries of Pasteur, a systematic study of the causes of diseases and other abnormal conditions was begun, but unfortunately not carried to its logical conclusion. The discovery that diseases were the result of bacteria apparently satisfied scientists that the millennium was dawning and that a brief period within which to annihilate the pests would bring us to a state of perfect happiness and freedom from diseases, but those who held to this view were doomed to disappointment. The obstacles in the way of perfecting man's environment have proven more formidable than was at first supposed, and after the lapse of nearly half a century, it is beginning to be realized that heredity as a factor in abnormal conditions cannot be longer ignored. The relation of heredity to infectious diseases is

noticeable, but even more striking is its relation to mental defects.

Stirpiculture and eugenics have not received the attention which the importance of the subjects demand. When a house takes fire, the first impulse of even the most ignorant is to deluge the building with water. Those more thoughtful are prompted to an attempt at subduing the flames before they reach the structure. The truly wise erect edifices which resist the flames. It has been found more economical to use fire-proof material in the construction of a building than the payment of large premiums for insurance or employing watchmen and maintaining an expensive fire department. As with buildings, so with the human structure. What should be the attitude of the State to the subject of heredity in all its phases may be yet an open question, but the advisability of legal enactments prohibiting the reproduction of imbeciles, idiots, the insane, and even the restriction of the rights of the confirmed inebriates can hardly be longer questioned. In pleading for a more general recognition of the importance of heredity, I would not minimize the value of proper environment, for, indeed, it is probably true that the tendencies of one's surroundings is to eliminate heredity and that a vicious heredity can in a measure be overcome by proper environment; but, on the other hand, the effect of heredity will assert itself where least expected, regardless of surroundings.

It must be remembered, too, that perfect environment is impossible. Human progress and race improvement depend upon both environment and heredity, and the sooner it is recognized and the issue met, the more prompt and certain will be the improvement of the physical and moral stamina of the human race. Man will live longer, happier, easier and freer from suffering and disease, his earning capacity increased and his contribution to the community more liberal.

Having arrived at more definite conclusions as to the causes of the unsatisfactory conditions which exist, the enormity of the task of correcting them is more apparent. The magnitude, scope and varying nature of the work demand the activities of every available person of all classes. Complex and complicated as is the subject of environment, it does not present the same difficulties as heredity. Any attempt even on the part of those who have a right to interfere, to control the emotions of those matri-

monially inclined, is resented bitterly and, with the present state of the public mind, any legal enactment restricting the rights of this class would not be worth the paper it was written on. "The inalienable right and God-given privilege" of man to choose his own mate is a principle so fixed in the minds of the people that it will be no easy matter to dislodge it. Though the discrimination is usually a matter of emotion and sentiment rather than common sense, thus far no State has attempted to abrogate it.

More education is necessary before legal steps will avail anything. In this the medical man must take the initiative and share largely the responsibility of the reform. How shall it be accomplished quickest and best is the problem which faces us. Another has suggested that "the more or less expert few-face the many who trust individuals but are slow to recognize the authority of the profession. What are the possibilities of reaching a better understanding? The answers are obvious. The few must deserve and win popular confidence, many must learn to appreciate the competence and devotion of the few, and the State must formulate and enforce the terms of this better understanding. If the cure of Democracy is more democracy, the corrective of a little education is more education. The only alternative is a return to autocracy.

To the millennium chaser, the short cut reformer and the efficient administrator, the slow process of education is an irritating suggestion. But scientific men should face facts as they are. The public mind is like a force of nature. It is childish to rail at it, to denounce it, to expect it to be docile about technical matters. Doctors should diagnose the public calmly and in the scientific spirit. They should try to trace the play of cause and effect and then take measures to bring desired results to pass. In this they have the right to ask the co-operation of all thinking men and women.

The public is controlled by leaders. These leaders must be informed and intelligent. Colleges and universities have a responsibility to train these leaders. Every institution of higher education should be a model of public sanitation and hygiene. Every graduate should be well grounded in the principles of personal and community health. The public schools could do more than they are doing at present to train children in hygienic habits and intelligent deference to sanitary regulations. Popular litera-

ture, lectures, visiting nurses' associations, organizations like anti-tuberculosis societies, city and State health departments and boards—agencies of many kinds—are all engaged in the work of popular health education. Doctors and professors of medicine must devote some time to public addresses, to co-operation with public authorities, to participation in local movements for improved sanitation, to hearty support of local health authorities when these are reasonably competent, and to civic movements designed to improve defective public health service.

There is much platitudinous talk about legislation and public opinion. On the one hand are the *doctrinaires* whose one idea of social progress is to get some law passed. At the other extreme are to be found those who are so convinced that law, unsupported by public opinion, is futile, that they are in danger of neglecting legislative aid. As a matter of fact, oftentimes agitation for legislation is in itself a valuable means of public enlightenment. In any event the gains in public opinion should always be fixed as soon as possible in well-drawn laws. Movements, therefore, for legislation affecting medical education, admission to the practice of the profession, the organization of health boards, the enactment of sanitary regulations, etc., should all be regarded as a part of the process by which the expert few and the many are to be brought into relation of mutual respect and good will. But it remains true that in a democracy, back of the coercive power of the law, there lies the social authority which in the long run is invested in the few who, by their approved competence and by their spirit of social service, command the confidence and respect of the public. With increasing intelligence the many learn to protect themselves against quackery and to place confidence in tested leadership. If the raft of democracy cannot be transformed into a swiftly sailing ship, there is hope, at least, that it may be built up far enough above the waves to carry its passengers dry shod."

LEGAL MEDICINE.

At first thought it might appear that the general public had little cause to be interested in legal medicine, but a moment's reflection is convincing of its far-reaching consequences to the public as well as to the profession. Testimony which can be secured only from a trained physician is often essential to the rendering of just and humane verdicts in criminal proceed-

ings. Upon the care and accuracy of his diagnosis, the honesty of his purpose and his fidelity to a responsible trust, often hinges the liberty or life of an accused person. Ignorance or moral turpitude on the part of the doctor may convict an innocent man or free a criminal. The doctors of Virginia should co-operate with the legal profession in an honest effort to devise some means to prevent the ignorant or those of questionable professional probity from giving expert testimony in courts of justice. If the suggestion to make all medical experts an impartial special jury summoned and paid by the court is carried out, a long stride in the right direction will have been made.

To no Virginia doctor, so far as I know and believe, can mercenary motives or improper conduct in such cases be charged, but remembering the character of testimony produced in recent years in other States, the inference is easy that all doctors are either ignorant or corrupt and venal.

Before concluding my remarks, there is another subject of which I cannot refrain from speaking briefly. Though cancer kills half as many people as tuberculosis, but slight organized effort has been made to check its ravages. In view of the fact that cancer is easier to diagnose, more speedily cured and less costly to treat than tuberculosis, this state of affairs is disgraceful. The statement that from seventy-five to ninety per cent. of cancers are curable in their incipency, astounding as it may seem to some of you, is true.

In its early stages, cancer is purely a local trouble; in fact, no more malignant than a wart. There are two methods of curing them—by excision or by stimulation of the cells to the point which produces their death. Stimulation is produced either by escharotics or by the X-ray. If the cells are superficial, they can be destroyed by stimulation. If they are of such depth that they cannot be stimulated to a degree sufficient to produce death, their growth is more rapid from having been stimulated. Stimulation hastens their growth; over-stimulation produces their death. If any doubt exists as to the depth of the growth, no attempt should be made to destroy it by hyper-stimulation.

Public opinion to the contrary, danger of metastasis or early recurrence does not exist when properly excised. Every person within the sound of my voice has been told that to operate upon a cancer means more speedy death.

Unfortunately this was once true. Cancer-surgery was brought into disrepute in former years as a result of the ignorance of the principle that it was harmful to cut cancer cells and turn them loose to be taken up by the lymphatics and distributed to other parts of the body. Incision is dangerous, excision, harmless. To cut wide and deep—beyond and below all abnormal cells—is not hazardous, but the only absolutely safe method of removing such growths. There was a time when no surgeon was allowed to operate upon a cancer until it became so large that it was in the way. The operable stage of an earlier period is the inoperable stage of today. Possibly fifty thousand people die from cancer in the United States every year. Twenty-five to forty thousand of this number should be saved. In Germany one woman in every eight and one man in every twelve die from cancer. At the rate at which it is increasing, it will not be a long while before the death-rate in America approaches that of Germany. It is high time some effort should be made to arouse the American people to a realization of the terrors of this malady.

Except a certain per cent. of cases which they believe can be cured by so-called cancer specialists or quacks, few people are yet willing to admit that cancer is curable. It is amazing that intelligent men and women will allow themselves to be duped by such people. It is true they cure some cases of skin cancer. The local effect of arsenic is the same regardless of who applies it, but it is obvious that those who handle such deadly agents should possess some knowledge of their physiological action, therapeutic properties and toxic effect. Every one who has a tumor or suspicious skin lesion should consult a competent physician and be guided by his advice.

Beware of the advertising "cancer specialist." Here is his winning card. He tells you that if he does not cure you, he will make no charge, but when you apply for treatment you are required to board in a third-class establishment, prepared for the purpose and for which first-class fare is charged. It matters not how far advanced the case is, you are kept as long as you can be persuaded to pay his price for board, and when you can be detained no longer you are informed that you came too late, but according to promise no charge will be made for treatment. No offer, however, is made to refund the amount col-

lected for board and incidentals—a compensation quite sufficient for all of his troubles.

The efforts of the medical profession have not been appreciated and understood. The progress of the science of medicine has not been accompanied by martial music, the sound of drums or the blast of trumpets, nor a shouting populace proclaiming its virtues, but in the silence of the sick room, the quiet of the laboratory, or the stillness of the dead house, achievements have been won which entitle it to the plaudit "well done." The assaults of its enemies without, the baneful influence of an element of ignorance within its ranks, and the wicked perfidy of an occasional traitor walking in its shadow have not deterred it, but rather spurred it on to greater endeavor and more determined efforts. As to how well it has succeeded, much testimony is forthcoming. The discovery of the specific germs of diphtheria, rabies, dysentery, cholera, cerebrospinal meningitis, tetanus, typhoid fever and plague, the development of protective inoculation for many of them, and Drs. Reed's and Carroll's demonstration of the theory of the transmission of yellow fever, not to mention the advance in accurate knowledge of malaria, tuberculosis and many other diseases as well as sanitation, bear witness to its strides. If other evidence were needed, the bounding progress and permanent advance in surgery to well-nigh perfection during the present generation, should prove convincing.

Figuratively speaking, the world is a great island encompassed by piratical seas and encircled with rugged shores and dangerous declivities. While the rest of humanity is absorbed in the pursuit of pleasure, wealth or fame, the doctor stands at the brink of the precipice, not only warning all who approach of their perils, but also bending every effort to thwart the purposes of other forces threatening man's destruction. With a great searchlight in one hand and a life line in the other, for countless ages, through sunshine and storm, through Summer's heat and Winter's blast, there he has remained faithful at his post, and the moment a danger signal is observed, every device known to medical science is brought into action in the attempt to locate the culprit. With the X-ray he is shadowed in the secrecy of his abode and shackled; with the microscope brought into full view and executed before his deadly mission is accomplished; with the stethoscope his battle cry is early recognized and stilled; with

the ophthalmoscope and test tubes the insidious nature of his attacks are observed and met. With the doctor's keen vision, sensitive touch and familiarity with the menacing effects of specific diplococci, his audacity is proven, the extent of his dangers recognized, and with the quickened perceptions of the experienced physician, driven from his lair. If, perchance, from sheer exhaustion the faithful sentinel relaxes his vigil and some unfortunate victim plunges headlong into the deep, or is ensnared by the wiles of his enemy, the life line is immediately brought into play. With cinchona, the captor is amazed; with the surgeon's knife, outwitted; with serums and salvarsan, bewildered; and with an exact knowledge of his power, a clear conception of his methods and an accurate estimate of his endurance, together with a perseverance of the doctor which knows no limit, forced to give up his prey.

There, through years of weary watching, the faithful guardian has stood alone, unaided and unprotected. His appeals for help—not for himself, but for humanity—have met with scant response; but, my friends, whether you hinder him or whether you aid him, whether you feast him or whether you starve him, whether you rally to his support in numbers sufficient to render effectual his efforts and to insure lasting results; whether the captain of organized and trained forces, standing in bold defiance of all attacks, or whether the lone picket at his post, I am here to tell you that when the last roll is called, he'll still be there.

CHRONIC COLITIS.*

By J. RUSSELL VERBRYCKE, Jr., M. D., Washington, D. C.

The colon is the seat of a chronic inflammation under a number of conditions. Colitis forms a part of chronic entero-colitis, and, indeed, this part of the bowel may be almost the only part affected. It is also associated with organic disease of the colon as carcinoma, benign tumors and strictures, partial intestinal obstruction due to other causes, and intestinal parasites; with disease of the heart, kidneys, blood vessels and liver; with chronic infections as tuberculosis and syphilis, and specifically as dysentery.

I will consider only the colitis which may be called primary in so far as the colon is ever

primarily affected. The so-called mucous colic, or membranous colitis, will not be differentiated, for, although the true status of this condition has not been definitely placed, it is considered by many authorities to be simply an exacerbation of chronic colitis. Cohnheim states that mucous colic with the passage of membranous material bears the same relation to chronic colitis as does gallstone colic to chronic cholecystitis. Whether this statement is too broad or not, I am unable to say. There are certainly cases of so-called membranous colitis which etiologically and prognostically appear to be distinct, but there are so many others in which it is impossible to state that they belong to one or the other class that it would seem wiser not to attempt to differentiate and to use the term membranous only as an adjective descriptive of the particular pathological condition present.

Etiology.—The most frequent cause of colitis is probably constipation, although this is also a symptom and undoubtedly aggravated by the condition. Habitual constipation may act by mechanical irritation of scybala and the chemical irritation of toxins.

Again colitis often follows dietary indiscretions oft repeated. Due to this cause it is often preceded or accompanied by chronic gastritis or gastro-intestinal catarrh. Achylia gastrica may have developed before the colitis followed.

The abuse of purgatives is often the causative factor, and, again, there are those, probably with a predisposition to the condition, in whom exposure to cold keeps up a chronic irritation. The nervous element plays a part in this disease, but a genuine catarrhal condition is probably always present.

Enteroptosis is found so often in patients suffering from catarrh of the colon that it must be considered as an important etiological factor. Fulton¹ analyzing 158 cases found 142 poorly nourished, gastroptosis in 118, right kidney prolapsed in 53, left alone in 2, and both in 15. Of his 158 cases, 154 had constipation either as cause or effect. Kahlo² in his 625 cases found a smaller number of ptoses, but still a considerable proportion. Gastroptosis was present in 17 per cent., enteroptosis in 24 per cent., right kidney palpable in 84 cases, left alone in 9, and both in 14.

Either sex may be affected at any age, but males are slightly more prone than women to develop colitis, and between 20 and 40 years

*Read before the Hippocrates Society, Washington, D. C., May 11, 1911.

of age exhibits a considerable number of the cases.

Symptoms.—Although many cases present typical symptoms, others are overlooked and simulate diseases of other organs. At this time, when it seems to be popular to refer most chronic diseases with symptoms of indigestion to trouble with the appendix or gall-bladder, it would seem proper to emphasize the fact that quite a number of the patients whose trouble is diagnosed as appendicitis or gall-bladder disease have in reality chronic colitis. Many are operated upon under the mistaken diagnosis and some are benefited, as there can be no doubt that chronic inflammation of the appendix can exert an influence in the production of colitis, but there are many such unfortunates, some of whom can exhibit several scars of useless operations whose symptoms remain unchanged, or who are worse by reason of aggravated nervous symptoms.

Symptoms of colitis may be legion. A few are rather characteristic. The rest, including most of the protean manifestations, are referable to causative or accompanying conditions and complications, for colitis is rarely found entirely alone.

Constipation is almost always present, and is usually of the spastic variety. In perhaps 75 per cent. of the cases it is a constant feature; in others constipation alternates with diarrhoea; a few have constant diarrhoea, and fewer still claim to have a normal number of movements. Probably the more severe the disease process the more liable is diarrhoea to occur, particularly where ulceration is present.

Colicky pain, varying in severity, is of great diagnostic import. It is probably due to several factors, the presence of flatulence, the spastic contraction of the bowel, and in membranous cases has been ascribed to the loosening and expulsion of the false membrane. Often patients complain not of a pain, but of a "distress" or "misery." Soreness is noted by the patient and located by him usually at one or more points along the course of the colon, more commonly perhaps at the sigmoid or a corresponding point on the other side of the abdomen. Intestinal flatulence is another common symptom.

These are the principal symptoms directly referable to the colon. The others are reflex or due to accompanying conditions, some of

which might be called complications, although it would be difficult to draw the dividing line between some of the causative factors which are still present, some accompanying conditions which are caused by the same etiologic agents and true complications.

The various gastric symptoms are distention, belching, regurgitation, heartburn, pyrosis, coated tongue, bloated feeling, gastric discomfort, bad taste, more rarely slight nausea or vomiting. These symptoms may be due to a reflex hyperacidity or to an accompanying nervous dyspepsia, but most often are to be explained by a co-existing gastric catarrh, or achylia.

Nervous symptoms are migraine, vertigo, neuralgia, sleeplessness, depression, loss of ambition and easy fatigue. Some of these are clearly the result of toxemia. The absorption of toxins may take place through the intact mucous membrane, but is facilitated by ulceration. Others of the nervous manifestations are indicative of an underlying, resultant or co-existent neurosis.

Various heart disorders are not infrequent as functional palpitation, smothering feeling, intermittency and irregularity. Millon and Marre³ have encountered a number of cases characterized by brief but repeated syncope. A. Mathieu⁴ has noted the same thing in cases of colitis with attacks simulating severe indigestion or chronic appendicitis.

Rheumatoid pains in the joints, probably toxic in origin, have been noted a number of times. Arraga⁵ says that in Argentine muco-membranous colitis is very common in children, and that they all have an arthritic tendency. Skin eruptions are very frequent, and even inflammatory diseases of the eye are occasionally seen.

I have purposely taken up all the subjective symptoms first, even those of small importance, and have left the objective findings until last, as it is by these that the diagnosis is to be made.

Tenderness is almost always to be found at some point or points along the course of the colon, never exquisite, as in ulcer of the stomach, but a well-marked soreness to moderate pressure. The location most frequently affected is at the sigmoid. Another point is at the beginning of the ascending colon. Less frequently the transverse colon is tender and in a few cases the whole colon. It is not uncommon

mon to be able to palpate almost the whole colon as a contracted cord, or again hardened masses of fecal matter may be felt in the cecum and ascending colon. Meteorism is common.

The frequency of enteroptosis being associated with colitis has already been considered.

So far we have obtained a hint of the diagnosis from the history; it is almost certain after the physical examination that we are dealing with a chronic colitis, and it now remains for the laboratory to confirm the diagnosis. This is done by the finding of mucus in the movement. It is present in every case, but not always constantly. Two movements may not contain visible mucus, while a third may show considerable. Other patients may pass mucus regularly. The form of the mucus varies. It may be jelly-like, flaky or thread-like or inspissated, and formed as casts. It is always, however, on the exterior of a hard formed movement, or if a considerable amount is passed either almost alone or with unformed movement, it is never intimately admixed.

It is of importance, as Cohnheim has shown, to remember that a considerable amount of mucus may be invisible if the movement is brought to the office in a jar and has dried out somewhat. Putting it in warm water will cause it to appear again. Blood streaks are sometimes found, and at times the discharge is muco-purulent, indicating ulceration. Under the microscope are found leucocytes, epithelial cells, and at times red blood cells.

Ulceration or hemorrhagic oozing is not very rare to judge from the number of positive benzidine reactions for blood which I have obtained in colitis patients.

Examination of the urine in between one-third and one-half of the patients will show varying excesses of indican, and, while not infallible, this may be taken as a fairly good index of the amount of toxemia present.

Prognosis.—The prognosis of chronic colitis is comparatively good under proper and continued treatment. At least between 50 per cent. and 60 per cent. will be cured. Some of these will remain well in spite of taking considerable license with what they eat. I have in mind one case of over eight years duration, who, after four years is able to eat anything within reason, and has had no return of his trouble. The majority of those, however, whom we call cured, do have to exercise a reasonable amount of care

in their choice of food or a recurrence will take place.

Almost all of the patients who are not cured are greatly improved, but there are some who prove very resistant to treatment and many who will not persist for a sufficient length of time. As in all troubles, the longer the patient has been affected, as a rule, the more resistant is the trouble.

Treatment.—It is impossible to give treatment in detail for the various symptoms and conditions which may be present in colitis, but I will mention general principles which apply to all cases, and will give some of the procedures which have given me particular satisfaction.

To secure the best results the patient must be impressed with the fact that it is a business getting well, and that as much depends upon him as upon the physician. Complete individual directions should be given him regulating his whole method of living. The following hygienic measures will hardly be out of place in any case, and good effects are rather speedily visible. "The first thing in the morning on awakening drink a glass of warm Carlsbad water, after which turn on the right side for fifteen minutes. Then perform abdominal and some general gymnastics (exercises to be given, if possible, by the physician), after which take a cold towel bath by standing in warm water, sponging the different parts of the body off with a towel wrung out of cold water, and drying each part in turn by brisk rubbing with a rough Turkish towel."

The diet varies with the individual, according to the conditions present in his stomach, etc., and should be made out carefully for that case, and in writing. As a rule, the food should be soft and finely divided, or easily rendered so by mastication. The coarse diet advocated by Van Noorden is rarely indicated. If we could view the conditions present as a neurosis with constipation and atony and unattended by a genuine catarrhal inflammation, such treatment might be in place. But the constipation present is almost always of the spastic variety, accompanied in the majority of cases by pain, and, as Cohnheim says, "Until the physician's experience is large it is well for him to follow the general diagnostic principles that constipation without pain indicates atonic constipation, and that constipation with gas and mucous colic indicates spastic constipation. The therapy directed according to the above will usually be

correct. To treat atonic cases with oil enemata is superfluous, and to treat spastic constipation with coarse diet is an error, since it would aggravate the catarrhal condition of the mucosa."

In some cases it may be advisable to have frequent meals rather than three large ones. If possible a little mild outdoor exercise every day before eating would be beneficial.

At night plain liquid albolene in doses of from one to three tablespoonfuls is a most valuable preparation. It is tasteless and goes through the digestive tract unchanged, simply acting by mechanical lubrication. Other medicines may be given for special indications when necessary.

The enteroptotic patients should be fitted with a well-fitting abdominal bandage. This is most important. If their condition is poor to start with, and they have lost much weight, their treatment should, to get best results, be started with rest in bed with forced feeding.

This brings us to the local treatment which is usually so necessary. Irrigations are of decided value. They may contain various medicaments to suit different occasions. Soda and witch-hazel, quite hot, is excellent where there is much soreness; ichthyol for an alterative effect; argyrol to combat infection in ulceration and allay inflammation. Starch with a few drops of tincture of opium during acute exacerbations when the inflammation has extended low down and is causing some tenesmus is of decided value. Solutions should always be used quite hot for spastic conditions. As a rule, they should reach every part of the large bowel.

The high enema, as it has been called, has been proven by Soper⁶ and others to be usually a misnomer, so far as the colon tube being introduced high up is concerned. They have proven by X-Ray that the soft tube, even when introduced with apparent ease, coils upon itself in the ampulla of the rectum. Although I have never tried to prove it, and I might be disappointed if I tried, I feel that a competent man can pass the tube higher than the rectum in at least 50 per cent. of the cases, but that the average physician and nurse who imagine that they are giving a high enema are obtaining no better results than if the tip of the tube was simply introduced about six inches. If the attempt is made to pass the tube high up it should be done slowly with a not too soft tube, and at the same time the solution should be

allowed to run in. This accomplishes the double purpose of keeping the tube straighter in direction and distending the rectum so that the tube may pass the sigmoid flexure. Practically the amount of tube passed is of less importance than the position of the patient. The solution may be demonstrated by physical examination to be throughout the large bowel as far as the cecum, even when not more than five inches of the tube have been introduced, if the patient's hips are elevated and he receives the irrigation first lying on his left side, then turns on his back, and finally on the right side. More rapid distribution can be secured by the knee chest position, but this seems to be rarely necessary, and is much more disagreeable. After introduction of the fluid it can be made to reach all parts of the mucosa by gentle manipulation of the patient's abdomen between the two hands.

In other cases the administration of olive oil enemata at bedtime to be retained all night is beneficial. It is soothing, lubricates and forms a protective surface over the abraded or congested mucous membrane helping to relax spasm. I have obtained good results in cases where there is a troublesome amount of flatulence from the addition of small amounts of spirits turpentine to the oil.

One of the methods which has proven most useful to me in combating subacute exacerbations is the injection of hot 10 per cent. gelatine solution lately advocated by von Aldor.⁷ A cleansing enema is first given, followed in an hour by the injection of the gelatine solution at a temperature of from 112 to 120 degrees; 50 to 100 c.c. are given with the patient lying on his left side, after which hot compresses are applied to the abdomen and the patient kept quiet for a couple of hours. This should be repeated daily for a while, and then every other day.

As I have said before, each case will call for variations in treatment and methods chosen, but, if the patient's co-operation is secured, persistence will usually result in much benefit or cure.

¹Fulton—*California State Journal of Medicine*, September, 1909.

²Kahlo—*J. A. M. A.*, Vol. 56, page 415.

³Millon and Marre—*Archiv. des Maladies de l'App. Digestif*, Paris, November, 1910.

⁴Mathieu—*Archiv. des Maladies de l'App. Digestif*, Paris, Vol. IV.

⁵Arraga—*Archives de Medecine des Enfants*, Paris, December, 1910.

⁶Soper—*J. A. M. A.*, Vol. 53, page 426.

⁷von Aldor—*Therapeutische Monatshfte.*, 1910, page 171.

SANITATION IN VIRGINIA CITIES AND TOWNS.*

By ROY K. FLANNAGAN, M. D., Richmond, Va.
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Being an optimist by nature, it goes greatly against the grain for me to have to talk to-day as I must necessarily do if I am truthful about disagreeable things.

Facts, which tell of failure of authorities to measure up to responsibilities, of neglect of opportunity, of the exaltation of the dollar at the expense of health and life, of that ignorance or heedlessness in Virginia towns and cities which permits death and disease to exist where health and life might so easily be enthroned.

But I did not choose this subject and since facts are called for, however severe may seem the criticism their presentation offers in certain cases, as candid men it should be received and with the resolve to clear skirts of any possible delinquency. Gentlemen! Sanitation in any real fundamental sense does not exist in the overwhelming majority of Virginia towns and cities.

THE POPULAR VIEW OF SANITATION.

Sanitation in the mind of the average man simply means cleaning the paper and tin cans off of the streets, putting a little slacked lime around the damp places once in a while, cutting the weeds, removing the pig pens and making the other fellow attend to his garbage. Reflecting the views of the average man, towns and cities in Virginia have taken the same attitude in regard to the most important matter with which government has to do.

Would you call it sanitation, men, for a fellow to wash his face? Well! Maybe you would, and you would be right in a sense, but what about the cleanliness of the rest of his body?

Sanitation which has only to do with the face washing aspect of a city's life differs in no respect from those ideas of public decency which have prevailed for over a hundred years, with but little effect upon the reduction of mortality, and only emphasizes in the mind of the man who *knows*, the deeper needs which lie beneath the surface of things.

WHAT SANITATION IS, AND CITIES APPLYING IT.

Sanitation means the establishing of conditions favorable to health, and involves the care-

ful, earnest, consistent work to that end by a trained man.

To what degree, then, are Virginia municipalities measuring up to the needs of the situation? Richmond, Norfolk, Lynchburg, Roanoke—four cities only out of the twenty of this Commonwealth—consider the health of their people of as high a degree of importance as the street paving and lighting, the police force or the cemeteries. In other words, these four cities only have dignified the health aspect of the city's life with a departmental place, with a trained man and his helpers in charge devoting their whole time and thought to keeping the citizens from getting sick.

The other cities that are doing anything in a public health way (and there are some that are doing nothing), only engage a part of a doctor's time daily, the remainder of his day being taken up with supplementing his income by attending sickness which it is the business of a real health department to prevent.

HEALTH OFFICER'S SALARY VS. SEXTON'S.

Four out of twenty, and yet some of these other cities have over 25,000 people within their borders! One city in this State pays its health officer \$480 a year, and its cemetery keepers \$1,900 yearly. These keepers are not paid too much; the city could not get efficient men for less and it does not try. Its \$480 ostensibly for health work is simply a premium paid for inefficient service.

Of forty-two towns in Virginia of over one thousand inhabitants, only about fifteen of them provide any stated compensation at all for the health officer, and this pay is in every instance pitifully inadequate. So much for the local machinery for fighting preventable diseases in our cities and towns. Will you meet this with the regulation statement that "they have always been without health officers, where are they any worse off?" This may be shown only by negative testimony, since no records exist at all whereby the truth may be known.

NO HEALTH BALANCE SHEET.

No town without a decent health department knows how much sickness there is within it, where it is, or what is causing it. No reports go to any central authority, and, consequently, any statement as to the healthfulness of the community (and every loyal citizen will uphold the health of his town) is nothing but guess work. There is absolutely no way of taking stock. A health officer in a town of 2,000

*Read before a meeting of the League of Virginia Municipalities, at Cape Charles, Va., September 14, 1911.

inhabitants told me last Saturday that there had not been a case of typhoid fever in that town for over a year, when two doctors had reported to me two hours previously that they each had treated two cases of typhoid in the past month. I did not embarrass him by telling him what I knew for he thought he was telling the truth, but he had no balance sheet and consequently could not know.

THE "VITAL" POINT.

The first duty of a health department is to receive reports from physicians as to every *preventable case of illness* they see, what it is, who has it, and where. Reports also of *every death* and *every birth* that takes place are likewise absolutely necessary. Yet only eight municipalities out of sixty in Virginia of over one thousand inhabitants (cities included) make any pretence of doing these three things, though every country of Europe has been recording these facts for years.

THE PROPER USE OF FACTS.

These facts are for use, and the use of them forms the chief business of the health officer, who knows his business. When the health officer knows where the sickness is, he can then figure out the causes obtaining in its locality, and apply the remedy to them. It may be bad water, it may be lack of sewerage facilities, it may be filth or bad drainage, or it may be imported disease, but with knowledge and assistance he is doubly armed for his battle.

Then there is the question of pure milk supply—the most fruitful source of death among the babies being impure milk. He should surely not neglect to guard the helpless little ones who are forced to swallow what is brought to them, whether poisonous filth under the guise of milk or a life-giving fluid from the "meek foster mother of the human race." His responsibility for stopping the public school from becoming a distributing point for death and disease will also add not a little labor to his day.

Then there is the tuberculosis problem which must be met in some sort by every town, or our brother's and our sister's blood will continue to cry out to us from the ground. Without going further down the list of the health officer's duties, and their name is legion, do you not agree with me that the health officer needs to be on his job every minute?

THE HEAVIEST TAX.

You are going to hear something soon about taxation. Let me tell you that the biggest tax

the average man of family pays is that to the doctor, the druggist, and the undertaker. Do you not know it? Typhoid fever, consumption, measles, mumps, dysentery, malaria, grippe, diphtheria, scarlet fever, and all their sort—how much money have you men had to put up in tribute owing to their presence in your home? Will it not aggregate more than any other item in your tax bill? Would it not be a good investment for your town to pay a skilled man to stand guard against these ills whose cause is so well known, and whose cure may easily be beyond the power of the most brilliant man of medicine?

THE PROOF OF THE PUDDING.

Where it has been tried it has been proven worth while. In my own experience I have seen one public health measure reduce the typhoid rate in one town of ten thousand inhabitants from fifty-nine in one year to thirty the year following, and the baby death from bowel troubles from thirty down to ten.

Man tends to keep well if you give him half a chance; he can swallow a lot of germs without doing him much damage, he does it daily and does not know it, but there is a point beyond which he cannot go safely and this point is much nearer in the baby than in the adult. It is the constant care of the real sanitarian to fight this dangerous surplus of germs, and where there is a commencing crop of poisonous fellows like scarlet fever, diphtheria, small-pox and typhoid, to segregate, antitoxinize and vaccinate them entirely out of existence.

APPLICATION.

Where, then, do you come in on this public health proposition? In your respective localities you are men in authority. You say to that one come, and he cometh; to this one go, and he goeth. Can you not use that authority to take the reproach of insanitation from your home town? Wake things up. The people will stand for it. I know it, for I have tried it. Men! it is your duty. You may talk about commission government, taxation and finance, public schools and good roads, but your bounden duty still remains the same as in the days of Cain. "You are your brother's keeper," and life and health are the gifts of God. It is your duty to see that these gifts, so far as you can effect it, are held unimpaired in your constituency that the sound mind dwelling in the sound body may with clearness meet the civic and social problems which confront our civilization.

In conclusion, let me leave with you this paraphrase from Tennyson:

Let all good things await
Him who cares not to be great,
But as he saves or serves the State
Not once or twice in "old Virginia" story
The path of duty was the way to glory.
He who walks it only thirsting for the right
And learns to deaden love of self
Shall find the stubborn thistle bursting
Into glossy purple which outreddens
All voluptuous garden roses.
Not once or twice in "old Virginia" story
The path of duty was the way to glory.

THE MANAGEMENT OF THE POST PARTURIENT PERIOD.*

By GREER BAUGHMAN, M. D., Richmond, Va.

Professor Histology, Pathology, Bacteriology, Medical
College of Virginia; Pathologist to the Memorial
Hospital; Member of the Southern Surgical
and Gynecological Association.

By the post-parturient period I mean the interval between the disappearance of the uterus and the time that the woman, completely well, will take up her usual duties. This period is, as a rule, very much neglected by the profession, but it is one of the most important stages of a woman's life; if she needs attention and is neglected, she is apt to become a semi-invalid for the rest of her days. Particularly is this true of primiparae. This important period should be taken out of the hands of the ignorant, indifferently trained monthly nurses, who are filled with superstitions in regard to both mother and child.

From the time of labor until the woman gets up she is regarded as an invalid, but after that time she is discharged with a few sketchy instructions about how she shall conduct herself, in spite of the fact that her organs have by no means returned to normal.

If we overlook the regeneration of the epithelium of the uterus and cervix which, as has been shown by Friedlander, Kundrat, Engleman, Leopold and others, is derived from the proliferation of epithelium of the fundi of the decidual glands, the regeneration of the connective tissue of the uterus by the activity of the connective tissue of the periglandular spaces and the degeneration of the arteries and veins by thrombi, compensatoryendarteritis and hyaline degeneration, the problems of the post-parturient state are the breasts and the

muscles. In this paper we will limit the discussion to the muscles.

In considering the muscles we have two problems: one is the removal of the hypertrophied non-striated muscle of the uterus; the other is the restoring of tone to the stretched and splayed striated muscles of the vagina, perineum and the abdomen. The non-striated muscle of the uterus is hypertrophied but not increased in number. According to Sanger the involution of the uterus on the part of the muscle is the absorption of the protoplasm of the muscle. He found that at full term the length of the average muscles fibre was 208.7 microns, while five weeks after labor they were only 24.4 microns. It takes six weeks very often for the uterus even in an uncomplicated case to come back to normal. This fact has induced me to instruct my primiparae not to return to their usual avocations until at least six weeks has past.

Both the vagina and perineum have been stretched to their utmost during labor and often they are ruptured. Sometimes the ruptures are clean cut but more often they are bruised as well as lacerated. Even when they are promptly and properly repaired they do not always make a perfect pelvic floor. This may be due to the fact that the parts are too much bruised to unite, or because the weak union is stretched by the pressure of a subinvolted uterus when the patient gets up too soon, or because the wound becomes infected. When there is no tear, the muscle fibres are stretched to their utmost capacity and the individual fibres are widely separated. The rugae do not appear in the vagina until the third week after delivery. These are facts that are well known and are usually taken into account, but the necessity of seeing after the abdominal muscles and the importance they play in the whole future life of the parturient woman is not so widely known by the average physician.

For four months the abdominal muscles are stretched by the growing uterus; then at the time of delivery particularly, if the case be a primipara with a long labor, the muscles are put to the most violent exercise. In many cases these muscles have already been atrophied by improperly adjusted corsets and lack of exercise. In addition to this, many of the women during the pregnant state have gotten less exercise than usual at first because of nausea, and,

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later, when they have begun to show, because of a false modesty.

It is not uncommon for virgins to have enteroptosis. These cases, because of the increased intra-abdominal pressure due to the growing uterus, often improve when they become pregnant. I am always solicitous about the future of a case when I find a woman that has been chronically constipated and that shows other signs of enteroptosis, beginning to have regular movements, as the uterus in growing increases the intra-abdominal pressure, because I fear that after delivery the abdominal muscles, weakened by pressure and strain, will add to the enteroptosis.

The external and internal oblique, transversalis, recti, and pyramidalis, by their contraction with the chest and abdomen, help to expel the foetus. These muscles with the fascia and their aponeuroses form the covering to the anterior abdominal walls. For four months these tissues have been put upon the stretch, and after the severe contraction incident to the expulsion of the foetus, they are not only stretched and tired but their fibres are spread apart. After repeated pregnancies, particularly if they are in quick succession, the muscles often suffer from pressure atrophy. The splaying of the muscles and their paralysis is noticeable after delivery in the case that the uterus and other abdominal organs can be palpated through the abdominal wall. In some well-developed women the muscles quickly regain their tone and by the time the patient is ready to leave bed are rested and back in their proper relations, but this is the exception. The flabby abdominal muscles are often seen weeks and months after delivery.

It seems to me that our responsibility in a case of labor does not cease until the mother has returned to a perfectly normal condition. She has not reached normal condition until the perineum and vagina are normal, until the uterus is involuted and the abdominal muscles are performing their function in a normal manner.

Rest in bed is the most important single means of helping the organs to return to their normal condition. In spite of Künster's idea about allowing a normal case to get up on the third or fourth day, it seems to me that the bed-lying period should be prolonged in the case of primiparae for two weeks, and with multiparae for at least ten days. All cases may be propped

up after three or four days, particularly those cases that are doing poorly, because this elevated position without effort helps to drain the uterus, and so tends to prevent sapremia. The length of time that the patient spends out of bed for the first few days should be designated by the physician, and they should be helped in and out of bed. This bed period should indeed be a rest just as an athlete would rest after violent exercise. During this period the decidua is being discharged, the excess of protoplasm in the uterine muscles is being absorbed and chemical changes are taking place in the muscles that relieve them of their tire.

I believe in an abdominal binder even from the first. For the first few days the pressure should be made behind and on the fundus by means of a roll. This prevents the tendency to retro-displacements. I have the women to use a binder extending from the umbilicus to the symphysis for at least six weeks after delivery, when they are supplied with a properly adjusted straight front corset, that fits snugly from symphysis to umbilicus and above that point is loose. The binder and corset are for the purpose of making the patient feel more comfortable, of retaining an increased intra-abdominal pressure, so as to help relieve constipation, to prevent splanchnic apoplexy accompanied by faintness, and to relieve the symptoms of temporary enteroptosis. The binder and the corset are, of course, only for temporary relief, as they would otherwise tend to defeat the very object that we are seeking—namely, better tone in the muscle, since they give the muscles less to do. The actual toning of the muscles we hope to accomplish by exercise and massage.

After the uterus has descended into the pelvis, the nurse or physician instructs the patient in abdominal massage, with the purpose of toning the muscles and relieving constipation. The idea is for her to keep up the massage for several months.

After six weeks from her delivery, the patient should be given a bimanual examination to determine the position and condition of her uterus, the condition of her vagina and perineum, as well as the position and tonicity of her abdominal muscles. If her muscular condition is perfect, then nothing more is needed except instruction as to the adjustment of her corset; if, however, the muscles are flabby, then she needs continued massage and proper exercises that

will tend to bring the muscles back to their normal condition.

While exercises must be directed to fit each case, the following exercises will be found helpful in most. These exercises are to be followed seriatim, at least a week being devoted to each exercise before the next one is added. I do not begin the exercises until six weeks have past.

The patient lies upon her back with chest thrown forward and the whole body semi-rigid, in what might be called the gymnastic position:

1. She raises one leg until the thigh is perpendicular with the abdomen; the leg is then extended and flexed several times. This is done with one leg, then with the other, and, finally, with both together.

2. The leg is raised extended until the thigh is perpendicular with the abdomen; then still extended it is brought back slowly to the bed. This is done with one leg, the other, then both together.

3. The same procedure as number 2 except that the extended leg is brought back almost to the bed and raised from that point.

4. With the feet fixed, the body is bent at the waist and the trunk with the chest thrown forward is brought from the bed to a position perpendicular with the thighs. All of the movements mentioned are especially helpful to the rectus and pyramidalis, though they likewise help the obliques and the transversalis.

5. Patient in same position raises on her right elbow and rotates her trunk to that side; the same is done upon the left side.

Tympanitis interferes much with return of the abdominal muscles to their normal condition. This condition should be promptly relieved in the post-parturient condition.

More attention to women in the post-parturient condition will reap greater rewards and will prevent much needless suffering.

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Proceedings of Societies, Etc.

AMERICAN PROCTOLOGIC SOCIETY.

(Continued from last issue.)

Cancer of the Rectum.

By J. RAWSON PENNINGTON, M. D., Chicago, Ill.

I take it we are all agreed as to the increasing frequency of cancer. At least it seems to me no other conclusion can be drawn from the following figures. According to the 12th U. S. census, cancer appears to have increased 12.1 deaths per 100,000 population in the previous decade. In Great Britain, so we learn from the work of Roger Williams, the deaths from cancer increased from 177 per million in 1840 to 885 per million living in 1905. Williams points out that while the population barely doubled from 1850 to 1905, the mortality from cancer increased more than six fold. Nor is the increase confined to the United States and Europe, it holds good for Japan, India and even for uncivilized countries. In short, cancer is one of the several diseases which is apparently increasing, by leaps and bounds, in spite of our boasted progress in Medicine, Surgery and Hygiene. Apart from the increased prevalence, the present death rate from malignant diseases is something dreadful to contemplate. Our anxiety in regard to malignant disease of the rectum in pardonable when we reflect that a good proportion of cancers involve this region. Williams found that 9.6 per cent. in males and 5.3 per cent. in females were located in the rectum. Is there anything that can be done to check this foe? The writer believes there is, and that this Society may be made a powerful factor for good in such a crusade. In Germany a similar crusade has been started against cancer of the uterus by Winters, agitating the subject both among the profession and the laity, it is estimated that the number of cases of inoperable cancer of this organ has been reduced over 30 per cent. as a result of calling attention to the early symptoms. Of the 2914 cases of rectal cancer in the male referred to by Williams, 2592 patients were over 45 years of age and

2180 of the 2533 female patients. In the male sex again the average age, at which the onset was noted, was 49.7 years, the minimum being 16.75 and the maximum 74; while the female sex the average was 50.4 years with a minimum 21.8 and a maximum of 88 years. This brings me to the crux of my argument, that every person who has reached the so-called "cancerous age" should be examined periodically for evidence of commencing carcinoma, not necessarily of the rectum alone, but in the female for example, of the uterus also.

In 120 resections of the rectum for malignant disease, W. J. Mayo observes: "It is an unfortunate fact that, in the majority, cancer of the rectum is not recognized in time to obtain a radical cure." I said a moment ago, that cancer in the beginning is a local disease. This granted, then early and thorough removal must lead to a cure. It has been shown that a large proportion of malignant growths originate in scar tissue. In cancer of the stomach, for example, the Mayos found that no less than 62 per cent. showed evidences of a previous ulcer. In rectal cancer patients frequently give a history of previous operations on the part. Does the cancer occur in the scar left from an operation for hemorrhoids done by one of the commoner methods—ligature, clamp and cautery, or some other technic leaving much scar tissue and sometimes stricture? May it not be occasionally engrafted on the scar following the usual incision method of operating for fistula? Here is a suggestion for us in our own work, secure smooth healing by resorting only to such procedures as leave the minimum of cicatricial tissue, hence, the least possible nidus for possible mischief in the future. With the co-operation of the public it seems to me we should learn much about cancer in the early stages. To educate the public we must—as has been well said—"organize, systematize, deputize, energize, supervise and economize." The field is broad and the opportunity is at hand. Shall we grasp it?

Malformation of Rectum and Anus, With Report of Case.

By DONLY C. HAWLEY, A. B., M. D., Burlington, Vt.

The facts of modern embryology explain a majority, but not all developmental defects of the rectum and anus.

M. B., female, age 4 weeks, came under my

observation in April, 1910. She had an imperforate anus, the rectum opening into vagina in the upper half of the rectovaginal septum, opening one-half by one-eighth inch in size, the longer diameter transverse, was evidently supplied with a sphincter, as the child had three or four well controlled movements daily. Anal depression was present and the vulva and vagina were normal, except as noted. The presence of uterus was normal or otherwise not demonstrated. There was no distension of rectum, no impulse and no prominence in perineum. The child was well nourished and otherwise normal. Operative interference postponed. The child is at present well, and is 13 months old and weighs 22 pounds.

While this defect is sometimes seen, many cases, reported as atresia ani-vaginalis, are no doubt in reality imperforate anal canal with vulvar outlet, a malformation admittedly of common occurrence.

Cases in which intestine opens well up in vagina are not accounted for on embryologic grounds, the two structures being embryologically dissimilar and independent.

Pruritus Ani, With Report of Case.

By DONLY C. HAWLEY, A. B., M. D., Burlington, Vt.

In this discussion I do not refer to cases due to intestinal parasites, errors in diet, etc., in which the pruritus is relieved by proper attention to the causative condition, nor so much to the symptoms as to the pathologic condition of the skin and nerve endings, which condition is pathognomonic.

The nearly constant local cause of pruritus ani is abrasion and ulceration of the anal canal, accompanied by blind sinuses underneath or fissures in the muco-cutaneous lining.

Further, some cases are associated with chronic proctitis, which may be a factor in producing or increasing the anal abrasions or ulcerations.

The treatment I have adopted is as follows:

With the patient well anesthetized, the anal canal is dilated, and the ulceration, together with the sinuses and fissures, is thoroughly cauterized with the Paquelin cautery, and also the entire area of chronic dermal inflammation.

My aim is to destroy ulcerated areas, the thickened and altered skin and the pathologic condition of the terminal nerve fibres.

Case I. S. H. E., act. 62, came under my

observation June, 1908. He had suffered with rectal troubles for 45 years. Twenty years ago he was operated on for fissure or fistula—was not certain which. He has had almost intolerable pruritus for eight years, and for the past year it has been so constant and unbearable, especially at night, that he has become a nervous wreck, and has lost 40 pounds in flesh and has been unable to continue his business.

Diagnosis—Chronic pruritus ani. The skin was inflamed, soddened and thickened over a large area about the anus, with many deep cracks, and four or five ulcerations and abrasions in anal canal.

Treatment as outlined. Result, cure and no return up to present time.

Case II. W. A., male, aet. 38. History of pain in rectum for 20 years, and of severe and intolerable pruritus.

Diagnosis—Chronic pruritus ani.

There was a large ulceration in anal canal and three or four blind sinuses, with an area of white brittle and infiltrated skin with large cracks about anus.

Operation—Same as in Case No. 1. Result, cure.

Other cases less severe have been operated upon during past three years, with satisfactory results.

The treatment outlined is not new nor original, having been advocated by Mr. W. Mitchell Banks, and practiced by Mr. Fred. C. Wallis.

Ball's operation is designed to render anesthetic the skin over the undercut area.

The operation described accomplishes the same end and besides destroys lesions in anal canal.

The former operation has resulted in extensive sloughing. To the latter no such danger attaches.

(Concluded in next issue.)

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

(Continued from last issue.)

ACUTE BRONCHOPNEUMONIA (?) RELIEVED BY THE STATIC WAVE CURRENT:

REPORT OF A CASE.

Dr. A. B. Hirsh, of Philadelphia, reported a case of acute pulmonary infection in which, after other measures had failed to give relief, a metal electrode 4 by 8 inches placed over the front of the upper chest and a 12 minute applica-

tion of the static wave current was given. Its effects were so prompt in relieving the pressure and weight within the chest, the cough and bloody sputum, that the current was used morning and evening for several days, and the patient went on to rapid recovery.

A RATIONAL MUFFLER FOR THE STATIC OR HIGH FREQUENCY SPARK.

Dr. George E. Pfahler, of Philadelphia, presented a muffler that he had devised. It consists of two glass plates (cleaned X-ray negatives, 14 by 17 inches are used), which form the top and bottom of the box constituting the muffler. The sides of the box, made of hard rubber, are 5 inches deep and closely fit the outside of the glass plates. Holes are cut in the ends for the passage of the sparking rods.

RATIONAL TREATMENT OF DUODENAL INFECTION.

Dr. Frederick H. Morse, Boston, Mass., read this paper. Duodenal infection may be acute and of little consequence. Rigid diet and a little antiseptic medication will bring about a cure. In the chronic conditions of duodenal toxemia where the infection has gone through the meshes of the diseased bowel, the infiltration of the poison is so far outside of the immediate digestive tract that the usual medicinal efforts avail nothing. This is where vibratory impulses set up by electricity and physical therapy are our most effectual means of eliminating the infection. The modalities mentioned in the treatment are the sinusoidal, faradic and galvanic surging apparatus and the wave current from the static machine. A long train of symptoms ordinarily called rheumatism, rheumatic sore throat, sciatica, constipation, neuralgia, etc., are usually cured when the pent-up toxic infection is removed.

IS THE PRESENT ATTITUDE OF THE MEDICAL PROFESSION TOWARDS PHYSICAL THERAPEUTICS JUSTIFIABLE?

Dr. J. C. Walton, of Richmond, Va., read this paper. While we all frankly admit that physical therapy has its limitations, and it is not claimed by its most enthusiastic devotees to be a panacea, still it fills a very important place in therapeutics, and there should not be any antagonism between this and any other progressive rational system of therapeutics, especially drug and serum therapy, and that very important branch of therapy, the therapy of the ductless glands. The sole object and aim of the true physician is to cure his patients, and to accept the truth wherever found. He should

always approach the solution of these great problems in therapeutics with an open and unbiased mind, striving diligently to ascertain the truth.

THREE CASES OF PELLAGRA TREATED BY HIGH POTENTIAL CURRENTS.

This paper, by Dr. D. H. Yates, of Madison, Fla., was read by the secretary. The author was led to use this treatment from the similarity of the skin lesions to those of chronic eczema. The method is applied as follows: The patient is seated on an insulated platform with the shoes removed. The feet are placed on the metal plate, and the plate connected to the positive side of the static machine. A crown electrode is connected to the stand support above the patient's head, and connected by a wire or chain to the negative side of the machine. The machine is started with the spark gap closed, and the sliding rod is then drawn out as far as possible without causing painful contraction of the muscles of the leg. The machine is regulated so as to give about 200 discharges at the spark gap per minute. The author thinks that the efficiency of this current in these cases, as in other cases, is due to its influence on metabolism.

ARSENIONIZATION IN INOPERABLE CANCER— A PRELIMINARY NOTE.

Dr. G. Betton Massey, of Philadelphia, read this paper. The possibility that the ions of arsenic when electrically diffused might be more efficacious as a local surgical protozoacide than the zinc-mercury ions suggested itself to the author shortly after the announcement of salvarsan. The experiments to test the question were begun in October, 1910. All but one of the patients on whom the treatment has been used are still under treatment, and it is too early to state the results of these experiments. The pure arsenic ion is obtainable from metallic arsenic shaped into an electrode so that it may be applied as the anode of a direct current when thrust into the middle of the growth, the cathode being placed elsewhere on the body surface so as to secure a good contact with the least local action under this pole. The result of this treatment is the production of a dark slough. Each patient subjected to the treatment has improved in general health more rapidly than under the zinc-mercury ions.

(Concluded in next issue.)

Analyses, Selections, Etc.

Stereoroentgenographs in the Diagnosis of Pulmonary Tuberculosis.

H. K. Dunham, Cincinnati, in a symposium on this subject, says that normally, the hilus shadow is of moderate density, irregular in outline and of small extent, merging internally with the heavy central shadow; externally, it has a sharp border made irregular by the heavy trunks emerging from it into the lung fields. In the lung fields there are two groups of shadows; the heavy trunks and the fine linear markings. The former radiate from the hilus shadow toward the periphery, there being three groups on the right, and two on the left side. The shadows are those cast by the blood vessels with their contained blood, the walls of the bronchi, reinforced by the accompanying lymphatics and fibrous tissue. The heavy trunks are the shadows of the large branches distributed to separate lobes of the lungs; the linear markings are the shadows cast by the smaller branches distributed to the various lobules of the separate lobes, appearing as fairly definite, straight lines extending toward the periphery, but being lost before they reach the latter.

Where early but definite signs of the disease are found on physical examination, there are an increase in the hilus shadow, and thickening of the trunks, and the fine, linear markings appear broader in outline, as well as denser and less regular, their course being frequently studied, sometimes almost to the point of obliteration of the lines. They do not radiate, but are broken and reach to or near the periphery. As a result, the linear markings appear to cross and interweave, producing a delicate network of varying sized mesh.

In a large class of cases presenting indefinite clinical signs suggesting pulmonary tuberculosis, the hilus shadow and heavy trunks are increased in area and density, but sharply defined, radiate and often reach close to the periphery; but these changes are usually diffuse rather than localized and there is also an absence of the interweaving and studding characteristic of the tuberculous cases.

In the probable tuberculous cases some of the characteristic alterations are seen, but the picture is not complete.

In the less advanced cases, careful study will show the changes in the shadows. If in them the fine linear markings are fuzzy or seem to merge to form a cloud effect, an active tuberculosis would be suggested. If these markings in a limited area are sharply defined and dense and show heavy studdings beyond the trunks, a healed lesion is suggested, especially if accompanied with heavy, coarse weavings which reach to or near the periphery. The heavy trunk leading to such an area is usually broad and dense, as is the hilus on the same side. Numerous calcified tubercles would complete the picture, but such a diagnosis should not be made from the plates alone.

Pleurisy, almost constant in pulmonary tuberculosis, is less often diagnosed either clinically or radiographically. Distributed evenly over one or both pleural surfaces, it usually defies detection; though marked local thickenings and interlobular pleurisies are recognizable. Pleurisy with effusion is readily recognized, the fluid being seen pressed up around the periphery of the chest cavity, the line of contact, however, presenting not a smooth, rounded surface but a series of cup-like depressions. The X-ray shows slight, if any, change in the fluid level whether the patient be in the erect or the recumbent position.

Samuel Wolman, Baltimore, who made the physical examinations in the cases from which the above findings were deducted, said that he conceived a profound distrust of diagnoses that had to be based on the peculiar stereoscopic markings, but later was converted to a belief in them, for the markings and interweavings declared to be pathognomonic of tuberculous changes in the lung tissue had no assignable anatomical or even clinical basis.

The clinical notes of all the cases reported were made before the radiographs were taken. The radiographic study and diagnosis, on the other hand, were made without any knowledge of the history or clinical findings. The appearance of the patients themselves was not such that snap-shot diagnoses could be made by the radiographer, for he did not send Dr. Dunham emaciated and buxom patients alternately for examination. In order to make the test severe, comparatively few advanced cases were sent, since the plates of these showed gross markings, such as are easily seen on single plates, and it was the stereographic markings that he was

most curious to study. Also, the study of the advanced cases soon convinced him that the clinical technic could be subjected to a more searching criticism, for there was an extremely gratifying coincidence of the physical and the radiographic findings.

Summing up, Dr. Wolman says that in only one of the 92 cases was there an entire disagreement; in only six, a partial disagreement. In 85, there was entire agreement. Of these, 39 are positive clinically, 24 are probable clinically, and 12 of these 24 are diagnosed as only probable by the X-ray. In 8 cases, physical signs were found by both methods, but they were diagnosed as not tuberculous; and in 14 cases, there was an agreement as to the entire freedom of both lungs from abnormalities.—(*Johns Hopkins Hospital Bulletin*, July, 1911.)

The Present Status of 606.

"Six hundred and six" has now been before the world for nearly a year, and pretty conclusive judgment as to its powers and limitations is now justified.

Briefly speaking, it is the most powerful symptomatic anti-syphilitic remedy in our possession. It will clear away mucous patches, it will heal ulcerations, it will make chancres disappear quicker than the mercurials or iodides are capable of doing. It has not displaced, and it will not displace the two old specifics, but it is an additional powerful weapon in our hands, and syphilis is now a much more manageable disease than it was before Ehrlich's discovery. In each and every case in which we have used it, the results have been good; in a few cases, the results have been brilliant, marvelous; in only very few, have they been slow or doubtful. In recent cases, we would advise the immediate use of the drug, but we would use it in conjunction with mercury. But we must bear this in mind: just as there are cases in which mercury seems to exert very little effect, but which respond very rapidly to 606, so there are cases of just the contrary character; cases in which 606 seems to be of no value, but which improve quickly under mercury.

The best, most thorough, most painstaking and most unbiased review of the present status of the treatment of syphilis with 606 is that of Prof. E. Tomaszewski, of Berlin, a translation of which appeared in the March issue of the *American Journal of Urology*. We append

here the conclusions arrived at by Professor Tomaszewski.

1. A single intramuscular or subcutaneous injection, possibly a repeated intravenous injection, certainly a combined intravenous and intramuscular injection of a sufficient amount (0.5 to 0.6 gm.) of salvarsan produces marked symptomatic effects in cases of *malignant syphilis*, often effects of very long duration, and not infrequently saves life in these cases.

2. Salvarsan treatment attains the value of an energetic mercurial course (calomel injections) in all other types of syphilis, with relatively rare exceptions.

3. It is possible that a permanent cure, a *therapia magna sterilisans*, may be effected early in the primary stage, but undoubtedly most of these cases remain clinically and serologically free from symptoms for a long period.

4. In cases of syphilis in any stage in which *mercury was not tolerated*, or very badly borne, or in which new recurrences appeared in spite of repeated courses of mercury, salvarsan almost invariably produced excellent results—if not permanent cures, at least cures lasting a long time.

5. Salvarsan produces certain local, more or less severe tissue changes in all cases except when used intravenously, and it gives rise to a series of untoward general effects no matter what mode of administration may be used. These untoward effects vary greatly in character and intensity in different individuals. Untoward effects of serious nature have thus far been noted in a very small proportion of cases after a single injection, and in some of these cases, they were referable to faulty technique or some other preventable cause.

6. We must continue to employ the chronic intermittent treatment of syphilis and must maintain as before, the necessity for a complete course of treatment in deciding such questions as transmissibility, consent to marriage, etc., in every case.

7. All our experiences thus far (indications, contraindications, etc.,) are essentially based upon single salvarsan injections; and we, as yet, know practically nothing of the action and untoward effects of a chronic intermittent salvarsan treatment.

8. Neither an injection nor an infusion of salvarsan excludes a simultaneous or subsequent course of treatment with mercury or iodides,

but, on the contrary, the special therapeutic effects of these three remedies may be happily combined.—(*Editorial, Critic and Guide*, June, 1911.)

Tetany and the Spasmophile Tendency in Infancy and Childhood.

Henry Koplik, New York, says that the term spasmophilia refers to the tendency, in childhood, to spasms of various kinds. The earliest noted in the infant is laryngeal spasm; later come convulsions and tetany. There is a large class of children who have never had convulsions, yet who are liable at any moment to have them. These infants are easily irritated by slight stimuli; they are pale, although often well nourished. These are found frequently among bottle-fed infants. Laryngospasm may result in sudden death due to spasm of the diaphragm and stoppage of cardiac action. The next development consists of convulsions which are evoked by slight stimuli; these convulsions seem to do the child no permanent harm, appearing from time to time very suddenly, with no intervening symptoms, and not affecting the mental condition. When tetany occurs the sensorium is affected, the child seems stupid, and appears not to see for a time. These children do not become epileptics. Early treatment of tetany may prevent its recurrence. The author has examined eighty-two children, of whom twenty-six were subject to fully developed tetany, and the rest to spasmophilia. Many had rachitis and craniotabes. Pyloric spasm is also found in the spasmophile child. The latter may be highly strung, neurasthenic, hysterical, or subject to spasmus nutans. It has been found that there are peculiarities of the galvanic reaction in these cases; cathodal and anodal contraction show a marked reaction, that following the opening of the anode being more pronounced than the closure. These cases are frequently mistaken for meningitis. The spasmophiles may develop into normal individuals. The only theory based upon experiment that attempts to account for the cause of spasmophile symptoms is that these are due to lesions of the parathyroid glands.—(*Medical Record*, September 16, 1911.)

Some Common Errors in the Treatment of Diabetes.

Homer Wakefield, New York, states that errors in the treatment of diabetes are fre-

quently due to a faulty conception of the conditions present. Prophylaxis and neutralization of the acidity present are not undertaken. Gastrointestinal fermentation is not treated, excessive ingestion of acid and acid forming foods is not prohibited, and tetanoid states of peripheral tissues causing development of sarcolactic and betaoxybutyric acids are not considered. Administration of neutralizing alkalies should be carried just far enough to keep up a daily slight alkalinity of the urine. Bicarbonate of soda should be given in hot water on rising and between meals, never after them. Syrups, sweetened foods, sugar, malt foods and malt beverages should be prohibited, because they produce acids. Diastatic ferments should never be given. The diabetic should get the carbohydrates that contain the least sugar, and are most rudimentary and concentrated; the vegetables should be those that contain most cellulose and other excrementitious matters. In diabetes there is a sluggish state of metabolism; oxygenation must be improved and for this purpose exercise is important. Each case must be individualized and the mental condition must be treated. In order that the treatment may be successful, the intelligent co-operation of the patient must be gained.—(*Idem.*)

Book Notices.

Handbook of Regional Anatomy. By FRANCIS C. FORD, A. B., M. D., Professor of Anatomy, Hahnemann Medical College and Hospital, Chicago, etc. Francis C. Ford, Chicago. 1910. Small 8vo., 193 pages. Price, cloth, \$1.50 net, postpaid.

This book is intended for the surgeon and student as a guide to the relationship, region by region, of various structures of the body at different levels from periphery to center. Numerous landmarks are noted, and some topography is introduced. The manual serves quite well for the purpose designed.

Inebriety—A Clinical Treatise on the Etiology, Symptomology, Neurosis, Psychosis and Treatment, and the Medico-Legal Relations. By T. D. CROTHERS, M. D., Superintendent Walnut Lodge Hospital, Hartford, Conn., etc. 1911. Harvey Publishing Company, Cincinnati. 8vo. 365 pages. Price, cloth, \$3, express prepaid.

In the issuance of his book on *Inebriety*, Dr. Crothers, who is so favorably known personally in this as well as other sections, presents in its various phases, and in scientific and valuable form, the discussion of a subject which has re-

ceived far less of study and attention than any other condition of similar importance confronting the medical profession. Inebriety is dealt with, not as a moral disorder, but as a distinct neurosis and psychosis, preventable and curable by physical and psychical measures. So far as we are aware, this is the only strictly scientific work of its nature published by an American writer; and the wide experience of its author as manager for over thirty-five years of a hospital for inebriates, together with his intimate knowledge of literature on the subject as editor of *The Journal of Inebriety*, necessarily gives prestige to the volume. The responsibility of criminal inebriates, medico-legal questions, and other matters in their relationship to alcoholism, receive a full share of attention, and the views expressed by Dr. Crothers will be accepted as authoritative. Because of its large usefulness, the book should find a ready sale.

Editorial.

Headache in Nephritis.

For years there has been a growing belief in the all-importance of diagnosis and the very little importance that medicines play in treatment of symptoms and suffering. This is perhaps due to a variety of causes. One is the nihilistic attitude assumed by a considerable number of the leading lights in regard to therapy. At times, even the family physician feels his hopelessness and helplessness when all measures fail and death comes. This let-alone policy has perhaps also been emphasized by surgeons and other specialists who occasionally seem to pride themselves on their ignorance of general remedial measures. A close observer of the trend of matters will notice two things which have come to light in very recent times—namely, the newest text-books on the Practice of Medicine are devoting more space to “treatment” than formerly, and that physicians are harking back to the old well-tried preparations, such as Basham’s mixture, Hoffman’s anodyne, Dover’s powders, etc.

Because a patient has a severe and at times an almost unbearable headache while suffering from chronic nephritis is no reason why some measures should not be taken for relief, though the kidney disease may be incurable. Our knowledge of the exact cause of the headache is not clear; it may be due to a constriction of the

arteries in the brain or to circulating poisons in the blood. For the former, nitroglycerine, aconite, belladonna, chloral hydrate or iodide of potash may be used with advantage, with the hope of lowering the general blood pressure and relaxing the contracted arteries, as dilators. For a quick symptomatic treatment, small doses of acetphenetidin combined with monobromate of camphor or guarded by aromatic spirits of ammonia will prove useful. Occasionally the headache may be so severe that codeine or morphine hypodermically is indicated. A useful preparation which has been possibly overlooked is the N. F. elixir of guarana.

For the more urgent requirements of elimination there are blood-letting, which acts in the double capacity of lowering the blood tension and letting out some of the circulating poison, especially when normal saline solution is used at the same time. In all cases free saline purgations must be early instituted, to which may be added when necessary diuresis and diaphoresis.

M. D. H., JR.

American Public Health Association.

The thirty-ninth annual meeting of this Association will be held in Havana, Cuba, December 5-9, 1911, inclusive, under the presidency of Dr. Robert M. Simpson, Winnipeg, Canada. A most interesting program has been arranged, including several symposiums and papers on most of the principal diseases "that flesh is heir to."

Special transportation and hotel rates have been secured, and many attractive entertainments have been planned for the visitors. These will include a trip to a tobacco plantation, a banquet at the National Theatre, a picnic on the grounds of la Tropical Brewery, a Spanish-Cuban Verbena at the Hotel Sevilla, a trip to Morro Castle, Cabanas, and Tricornia Detention Camp, and a visit to the "Maine." The secretary, Dr. Wm. C. Woodward, of Washington, D. C., will furnish any further information.

The Association of Seaboard Air Line Surgeons

Held its tenth annual session in Washington, D. C., October 17th and 18th. A number of papers were read, and between the business sessions the members visited many of the points of interest in and around the city. The meeting was brought to a close with a banquet tendered the surgeons and their ladies by the rail-

road company. Dr. Jos. M. Burke, Petersburg, Va., is chief surgeon and chairman of the Executive Committee. The next meeting will be held in Tampa, Fla., in October, 1912.

Officers elected for the coming year are: President, Dr. S. C. Benedict, Athens, Ga.; Vice-Presidents, Drs. H. A. Burke, Petersburg, Va.; R. L. Harris, Jacksonville, Fla., and J. H. Miller, Cross Hill, S. C.; Secretary and Treasurer, Dr. J. W. Palmer, Ailey, Ga. (re-elected), and new members of the Executive Committee, Drs. R. B. Epting, Greenwood, S. C., and J. C. Knight, Plant City, Fla.

The Medical and Chirurgical Faculty of Maryland

Held its semi-annual meeting at Baltimore, October 20th and 21st. Dr. Harvey W. Wiley, of Washington, D. C., addressed a joint meeting of the Faculty and the Baltimore City Medical Society on the first evening. The reading of interesting, scientific papers was interspersed with clinics of all kinds and descriptions at the various colleges and hospitals, while luncheons, a smoker and automobile ride added much to the social pleasure of those in attendance. Drs. F. B. Smith, of Frederick, and John Ruhrah, of Baltimore, are president and secretary, respectively.

The Association of Military Surgeons of the United States,

At its recent meeting in Milwaukee, the last of September, decided to hold the 1912 meeting in Baltimore, and elected the following officers for that time: President, Surgeon Chas. P. Wertenbaker, of the Public Health and Marine Hospital Service; Vice-Presidents, Surgeon W. C. Braisted, U. S. Navy, Col. Chas. Adams, Illinois National Guard, and Lt.-Col. J. R. Kean, U. S. Army; Secretary, Major Charles Lynch, Medical Corps, U. S. Army (re-elected), and Treasurer, Major Herbert A. Arnold, Pennsylvania National Guard (re-elected).

The West Virginia State Medical Association,

Which held its forty-fourth annual meeting at White Sulphur Springs, September 20-22, elected Dr. Chas. O. Henry, of Fairmont, president. Dr. Arthur P. Butt, of Davis, was re-elected secretary. The next meeting will be held at Webster Springs during July, 1912.

The Augusta County Medical Association

Will hold its last meeting for 1911 on the

afternoon of November 1st, in the Assembly Hall of the Association at Staunton. The present officers of the Association are Dr. H. Fitzhugh White, Fishersville, president; Dr. A. J. Burkholder, Staunton, secretary, and Dr. W. F. Hartman, Swoope, treasurer. Meetings are now held on the first Wednesdays in February, May, August, and November, instead of three times a year as formerly.

The Rappahannock Valley Medical Association

Holds its next meeting in Fredericksburg during November. At the September meeting, Drs. Wm. P. Mathews and Lawrence T. Price, both of Richmond, were elected honorary members of the Society.

Medical Society of Virginia.

As we go to press, this Society is meeting in Richmond, with a good attendance. A detailed account will appear in our next issue.

Diphtheria Antitoxin.

As there is no State law authorizing the Virginia Health Department to issue this antitoxin free, arrangements have been made whereby it can be supplied physicians and boards of health at a minimum cost. It is urged by the Department that a small supply should be kept on hand by county boards for immediate use, as even the delay of awaiting shipment from Richmond might prove fatal and cause a great spread of the disease.

Virginia State Board of Pharmacy.

The number of applicants for license appearing before this Board at its meeting in Richmond, October 17th, was the smallest in years. Examinations will be held in Richmond during 1911 on the third Tuesdays in January, April, July and October, applications to be filed with the secretary at least ten days prior to date of examination.

Dr. J. J. Kindred.

To the regret of his many friends in this State, Dr. Kindred, who was to have attended the present session of the Medical Society of Virginia and to have read a paper as an invited guest, was compelled by important engagements to decline shortly before the issuance of the programs for the meeting.

Westbrook Sanatorium.

Richmond, Va., for the treatment of nervous and mental diseases, alcoholic and drug addic-

tions, was opened the first of this month. It is situated a little north of the city, and was formerly the summer home of the late Major Lewis Ginter. It is under the management of Drs. James K. Hall, Paul V. Anderson and Edward M. Gayle, all formerly of Morganton, N. C.

The Buffalo Medical Journal,

Established by Dr. Austin Flint in 1845, and consequently one of the oldest medical publications in this country, appears under new editorial management beginning with October. The editor, Dr. A. L. Benedict, who is a veteran in editorial work, will be assisted by Drs. Grover W. Wende, Charles W. Hennington and Fayette D. Peck.

Dr. W. A. Evans,

Former Health Commissioner of Chicago, is now conducting the department, "How to Keep Well," in connection with the *Chicago Tribune*. Dr. Evans is well fitted for the position, and has an opportunity to carry on the good work he commenced while in charge of that city's health department.

Dr. J. Allison Hodges,

Of Richmond, Va., has recently returned from a pleasant trip to London and Paris.

For Sale or Exchange—\$2,000 practice; \$1,200 of this is contract and paid monthly. Practice located in Piedmont Virginia. Competition light. Telephone service and electric lights for office free. No real estate will be sold or bought. References given and required. For full particulars, address "H. 15," care *Virginia Medical Semi-Monthly*.

Location Wanted—Physician wants a good location in Virginia. Small town or rural district preferred. Please state when answering, county where located. Address, "C. Z.," care *Virginia Medical Semi-Monthly*.

For Sale—Having decided to specialize on Diseases of Children, I wish a competent man to take my practice in a Virginia town, in the most beautiful portion of the Shenandoah Valley. Address, "W. L.," care this *Journal*.

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THE SOURCES OF INFECTION OF TYPHOID FEVER.*

By ENNION G. WILLIAMS, M. D., Richmond, Va.
Chief Commissioner of Virginia Health Department, etc.

No disease has occupied the attention of our medical societies to such an extent as has the subject of this symposium. While to the general practitioner the treatment of typhoid always furnishes the topic for an animated discussion, to the health officer the sources of typhoid infection is a theme of the greatest interest. It is to be hoped that soon the citizens of the country, other than the doctors and health officers, will take such an interest in the disease as its importance deserves; then, with the combined effort of the citizens, doctors and health officers, typhoid fever will be relegated to a place among medical curiosities and its records will be only a matter of history.

Theoretically, the prevalence of typhoid fever should be in direct proportion to the civilization of a country, because the very existence of typhoid is dependent upon the dissemination of human filth. Unfortunately, our country would take a low place among the nations if an estimate of our civilization were based on this health standard, for among the civilized nations of the world there is only one that has a higher rate of typhoid fever than has America, and that is Spain, as shown by the census of 1900.

However, fortunately our country is awakening to an appreciation of preventive medicine. We will soon no longer be in the class with our decadent rival Spain, if the comparative experience of two army camps in this country at thirteen years interval may be taken as evidence. One was the camp in Florida doing the Spanish-American War, and the other was the

recent camp of an army corps in Texas. Both lasted about four months in the Summer season. The latitude of the two was about the same. In Florida there were 10,759 soldiers, and in Texas, 12,801. In Florida there were 2,693 cases of typhoid and 248 deaths. In the Texas camp there was only one case of typhoid and no deaths.

This victory on the part of the medical corps of our army should make the people of our country pause to consider the lives that are now being sacrificed because our States and municipalities are not putting into practice well ascertained principles concerning the prevention of disease. It was estimated in the 1900 census that there were 35,000 deaths in the United States from typhoid fever and about 350,000 cases. In the State of Virginia during this past year there were about 13,000 cases and about 1,300 deaths. These figures are steadily declining as information about typhoid fever spreads among the people.

Typhoid fever is due to the invasion of the human body by a microscopic plant known as the bacillus typhosus, which, when it dies and disintegrates, gives up a poison that kills or injures certain body cells, giving rise to a disturbance of the normal functions of the organs and a consequent characteristic train of symptoms. The bacillus typhosus depends for its propagation upon organic matter, moisture and a temperature about that of the human body. It grows readily on most of the ordinary laboratory culture media. It readily succumbs to a temperature of 60° C. or 140° F. in a few minutes and may be easily killed by direct contact with the common chemical disinfectants.

It may remain alive for days, weeks and even months when dry and even when exposed to a freezing temperature. Although the organism may remain alive but dormant in these unfavorable surroundings, it will not multiply and sooner or later it will die. As soon as the live but dormant organism reaches a favorable

*Read before the forty-second annual session of the Medical Society of Virginia, at Richmond, October 24-27, 1911, as a part of the Symposium on Typhoid Fever.

environment it begins to multiply. The most favorable environment is that of the human body. For some reason, not understood, the bacillus typhosus will either not grow in the bodies of lower animals, or else if it does grow it does not injure the cells and so does not produce the characteristic symptoms of typhoid.

With the exception of milk, the human body may be looked upon as the only place in nature where the bacillus typhosus multiplies, and every bacillus typhosus may be said to come ultimately from the human body; therefore, every case of typhoid fever is caused by the bacilli that came from the body of a person suffering from typhoid or of a person harboring them.

The destructive influence of the bacillus typhosus is not due, as with many other bacilli, to a poisonous substance exuded or given out by the living bacillus, but is due to a poison within the bacillus itself, hence called an endotoxin. When the bacillus dies and its body disintegrates, then the poison is liberated and injures or destroys the human cells.

We thus understand that it is necessary that the bacilli must multiply and disintegrate before the symptoms appear.

The fact that the poison of the typhoid bacillus is an endotoxin and that the typhoid vaccine is simply dead bacilli, and consequently contains the same poison, should make it clear that the vaccine should be given only as a preventative and never as a curative agent. To give vaccine after a person has contracted the disease is but putting into the body the very same poison that is already injuring the body cells and can only result in increasing the damage and the severity of the symptoms.

The invading bacilli gain access to the human body through the mouth, being carried in usually on food and drink. Having reached the favorable environment furnished by the human body, they multiply very rapidly; some remain in the alimentary tract and leave in the intestinal discharges, others pass through the mucous membrane and enter the circulating blood. In the blood and in the intestinal discharges the bacilli may be found in great abundance, even several days before the symptoms of the disease necessitate the patient taking to bed.

As soon as the bacilli begin to multiply in the body, a mysterious reactive process begins by which the body attempts to destroy the in-

vading organisms. The defensive substances thus formed are called anti-bodies. They cause the destruction and disintegration of the bacilli, liberating the endotoxin, which attacks and injures the normal cells and produces the consequent characteristic symptom-complex. As we would therefore expect, the greatest number of bacilli are found in the blood in the first week of the disease and they diminish as the disease progresses. This is also true of the bacilli in the intestinal discharges. The bacilli are also more abundant in the mouth early in the disease. Instances are on record where the disease in its early stage has been transmitted by kissing. This cannot, however, be said to be a common mode of transmission.

As the bacilli are circulating in the blood, they are, as is to be expected, eliminated by the kidneys and may be found in the urine. Investigations show that they are found in the urine in about one-third of the cases. They have also been found in the sweat, tears, secretion of the mammary glands, the saliva and bronchial secretions, particularly the latter if the lungs are affected. But the chief and constant avenue by which the germs leave the body is through the alimentary canal; that is, in the intestinal discharges.

Not all persons who get the bacillus typhosus in their bodies suffer from the disease. In some the bacilli enter and soon perish. In others the bacilli enter and multiply in the intestinal canal and are given out in the discharges, but never cause any symptoms. Such persons are called paradoxical carriers. Of those who suffer from the disease, about 95.5 per cent. cease to have bacilli in the discharges six weeks after the cessation of the temperature, while 1.5 per cent. continue to discharge bacilli until the end of three months. These are called temporary carriers. 3 per cent. become chronic carriers and continue indefinitely to give out bacilli.

The facts then upon which is based our knowledge concerning the sources of the infection of typhoid fever are that the bacillus typhosus multiplies almost solely in the human body, that it enters the body by the mouth, multiplies in the alimentary canal and blood, and leaves in the discharges of the intestines and bladder and to a less extent in other excretions and secretions of the body.

The body of the patient or carrier is the ultimate source of the infection. The sick room is where the germs are most concentrated and begin their dissemination and career of destruction. It is here that contact infection is greatest. The hands of the nurses or attendant become infected from direct handling of the patient or by handling soiled clothing. The germs on the infected hands of the attendant have many opportunities of getting to the mouth directly or indirectly on food or drink.

From the sick room the germs may leave in many ways, on the hands of attendants, on soiled clothing, or other materials, on the feet of flies, and in the sewage.

Sewage must be looked upon as the greatest disseminator of typhoid fever. Not all sewage contains the typhoid germs, but one can never tell when sewage will contain the discharges from a patient or carrier.

Any method of disposing of sewage which will by any possibility allow even the smallest particle of the sewage material to gain access to the human mouth is a source of infection.

The open and insanitary dry closets, which are so common in the rural sections and small towns, and even in many of the larger cities, are points from which the germs are often distributed throughout the community. They are among the most important factors that must be dealt with in public health work. It would not be an exaggeration to say that for every insanitary closet that is converted into a sanitary one a life is saved.

In these insanitary closets, the excrement furnishes an excellent breeding place for flies. The flies with their feet and bodies smeared with the germ-laden material, distribute this upon the food or drink in nearby dining rooms. It is strange that the fly was not convicted of its murderous proclivities before it had killed so many of our soldiers at Camp Chickamauga during the Spanish-American War.

In these insanitary closets the material lying on the ground is likely to be carried by a flushing rain over the ground to the nearest water course, which may furnish drinking water to a community below, or it may be carried into a well or spring.

When a well becomes contaminated it is usually from the top or a few feet from the top. Contaminated water is likely to become purified if it filters through many feet of earth, unless the quantity of infection is very great, as

the water bearing strata, under a city or town. The exception to this may be found in limestone sections or where there are fissures allowing water to reach the underground water courses without filtration.

The most frequent sources of contamination of a well are rain, washing filth into the top of the well, filth carried on shoes to the top of a well and then washed through the cracks, and filth from the hands of persons pulling the windlass or handling the buckets.

Sewage may also enter the mouth on various uncooked foods, such as milk, oysters, celery, lettuce, etc.

The germs may be carried by flies to milk or to the milk pails. The milkers or handlers of the milk may be chronic carriers, or they may be in the convalescent or incubation period. The milk pails or bottles may be washed in contaminated water, or, as in an outbreak recently worked up by Dr. Freeman, a number of cases were evidently due to milk bottles which were carried to the sick room, and returned to the dairy and sent to other parties without being sterilized.

Several notable outbreaks have been attributed to raw oysters. Large quantities of water pass through an oyster as it lies in its watery bed. If the water contains micro-organisms, they readily lodge in the body of the oysters. All oysters that are taken from water polluted with sewage are possible sources of typhoid.

Uncooked vegetables may be vehicles for carrying the germs from the filth used as fertilizer or from polluted water used for watering or washing the vegetables. Although the possibilities of infection from this source is slight, still it must be borne in mind.

Having traced the principal avenues of infection from the body of the sick to the mouth of the well, we will consider the problem of the health officer who is given a number of cases and has to determine the source in order to apply the proper preventive measures.

For the last three years, the State Health Department, through its Bureau of Rural Sanitation, under the direction of Dr. A. W. Freeman, has investigated many outbreaks in Virginia. These investigations, together with those by Dr. E. C. Levy, Health Officer, in Richmond, have thrown much light on the relative value of the different factors in transmitting typhoid.

The investigation of an outbreak consists of

a careful study of all the factors concerned in the spread of typhoid as applied to each individual case. A blank form is used for the collection of the data, and the following facts are noted: name, residence, color, sex, age, date person took to bed, occupation, school attended, how long at present residence, absences from home during month preceding illness, source of drinking water at home and at place of business, source of milk used at home, source of various uncooked foods, exposure to other cases, cases in neighborhood, general sanitary condition of premises, condition of well or spring, condition of privy, screening against flies.

A comparative study of the facts elicited from the several cases involved in the outbreak will usually eliminate certain factors and also furnish a clue which can be followed up more specifically.

The trained investigator will promptly recognize the general features of an epidemic due to different causes. When the epidemic is water borne, the preliminary study promptly shows all or practically all the patients to have used a common supply of water. If in a community which previously had little or no typhoid, a number of cases occur among users of a common water supply, particularly in the winter months when flies are absent and if milk infection can be eliminated, then the water may be assumed to be the source.

If milk is responsible for an outbreak, it is usually promptly suspected. There is a high percentage of infection among the users of the infected milk and the maximum number of cases appears about the same time.

It is often exceedingly difficult or impossible to trace the source of many cases, particularly is this true of the endemic or sparsely scattered ones. Although conclusive evidence may be lacking, the fly and the insanitary privy are often looked upon with suspicion. In many instances the circumstantial evidence is sufficient to condemn them both as accessories in the crime.

Whatever may be the factors in transmitting the infection in individual cases, the conclusion of the whole matter is that the source of the infection of typhoid fever is human filth from the typhoid patient or the typhoid carrier.

Tincture of iodine is highly efficacious as a chemical antidote for carbolic acid poisoning, an insoluble compound being formed.

J. B. T., *Therap. Rec.*

SYMPTOMS OF TYPHOID FEVER.*

By J. JETT M CORMICK, M. D., Norfolk, Va.

In attempting to discuss the symptoms of a disease that has been studied by the intellectual giants of our profession ever since it has been a real profession, I find myself in the position of a writer, who, after collecting a volume of poetic gems, announced in his preface, "I have gathered a posy of other men's flowers, and nothing but the thread that binds them in mine own." The classification of the cases in certain types is more or less arbitrary. In regard to severity, the varieties may be:

(1) The abortive form, in which the temperature after about ten days, drops to normal. I well remember one of my first cases, a young man who ran fever for about ten days, and after three days of normal temperature, against my advice, got up and walked about the house. In five more days his temperature had reached 107 degrees, and in twelve days he died of diarrhoea and exhaustion. The diagnosis was confirmed by autopsy.

(2) The mild form, in which the fever runs about three weeks; complications are absent and none of the symptoms are severe.

(3) The severe form, in which the symptoms are grave from the beginning, and there is evidence of profound toxemia.

(4) The hemorrhagic form, in which there is a tendency to bleeding in different parts of the body.

(5) The ambulatory form, in which the patient continues his daily duties, and seems to have little or no toxic effects from his fever.

Classified anatomically, we have:

(1) The cerebral form, in which the nervous symptoms, such as severe headache, retraction of the head, delirium, stupor, convulsions and even mania, predominate. About three years ago I had such a case; he jumped out of bed, knocked his wife down and took to the street in his night shirt. Three policemen and a patrol wagon landed him in the hospital. Fresh air and exercise seemed to do him good, as his recovery was uninterrupted.

(2) We have the pulmonary form, in which the disease may have its inception like acute bronchitis, pneumonia or pleurisy. About thirteen years ago, I attended 10 cases of typhoid fever in a boarding-house, nearly everyone of

*Read before the forty-second annual session of the Medical Society of Virginia at Richmond, October 24-27, 1911, as part of the Symposium on Typhoid Fever.

which began like influenza, the temperatures dropping to normal about the fourth day, and then rising to run the typical typhoid curve.

(3) The gastro-intestinal form, in which the onset is accompanied with distressing nausea, vomiting and abdominal pain. The pain is often referred to the right iliac region, suggesting appendicitis. Such cases have been operated on for appendicitis. Again, diarrhea may be the most conspicuous symptom at the onset.

(4) The renal form, in which the urine is markedly diminished in quantity, and contains albumen, tube casts and blood; retention of urine often occurs.

In regard to its prevalence, typhoid fever is found from pole to pole, and at all altitudes; all races are equally susceptible to it. In children the tendency is for the temperature curve to be more abrupt, and to run a shorter course; bronchitis and also the nervous symptoms are more common with them, the abdominal symptoms less severe. In old age the disease is peculiarly apt to be fatal by reason of the pneumonia that is so apt to complicate it. A single physician's experience does not count for much, but mine has been that the most malignant cases and the vast majority of fatalities occur between fifteen and twenty-five years of age. There seems to be a peculiar lack of resistance on the part of the tissues to typhoid toxin at this time of life, as evidenced by the decidedly poisoned appearance of the patients, and the number of cases of hemorrhage and perforation.

In studying the course of the disease, it is expedient to divide the time into prodromal stage, and then week by week. A more or less imaginative case is best described in order to understand typhoid fever, as the symptoms are capable of almost endless combination.

The period of incubation varies from a few days to three weeks. A man who selected the typhoid route to the next world drank a virulent culture of typhoid bacilli, and developed the disease in three days. Headache, malaise, loss of appetite and probably nausea, continuing for some days, are the first symptoms that make one suspect typhoid fever.

The onset is generally slow; there may be slight delirium, cough or diarrhea, according to the type the case will follow. The facial expression is dull; the tongue is coated; often there is slight nose-bleeding; chills are more or less common and may be followed by sweating.

First Week. In the average case, after complaining for some days of the majority of symptoms enumerated, the patient consults his doctor, and is put to bed. His weakness is usually so marked that he readily takes the doctor's advice. There may be pain in any part of the body. Distressing wakefulness is apt to occur during this week, often necessitating opiates to obtain any rest for the patient. I remember a foreigner complaining to me that he could not "find his place in the bed." As a general rule, there is little or no delirium during the first week. The skin is dry and sometimes there is an erythematous rash on the body. The fever rises about a degree higher each day. By the end of the week rose colored spots appear, usually over the abdomen; they are apt to be few in number, though I have seen them so numerous as to suggest measles. The cough may be distressing; the stomach is very irritable, and there may be nausea and vomiting, particularly if much food or drugs are given. The tongue is dry and coated; occasionally it may be red and glazed; diarrhea with pea soup stools occurs, but constipation may exist. The spleen is nearly always enlarged. The pulse is slower than the degree of temperature would indicate, and is often dicrotic. By the end of this week, blood cultures will usually show the typhoid bacilli.

Second Week. During this period, the symptoms already enumerated increase in severity; the patient grows progressively weaker and weaker until he can no longer help himself. The face is flushed and may become almost expressionless. Deafness becomes more and more noticeable; a recent case of mine was left absolutely deaf. The headache and wakefulness gradually subside, and delirium begins. In severe cases, coma vigil, picking at real or imaginary objects and subsultus tendinum may exist. Successive crops of spots appear on the body, the tongue becomes more coated and may be dry, brown and cracked. The gums may have sordes on them, though I think this has been less noticeable since more attention has been paid to the toilet of the mouth. The lips are dry and often fissured. The stomach is less irritable than during the first week. Tympany appears, and on pressure tenderness and gurgling are apt to be noticed in the right iliac fossa. Diarrhea may be severe; hemorrhage is more apt to occur towards the end of the second week. The pulse becomes rapid, weak and compressi-

ble. Temperature maintains the elevation reached at the end of the first week, or may go higher; the heart becomes weaker, and pulmonary congestion may appear. During this week a positive Widal reaction is obtained in the majority of cases. Typhoid bacilli may be isolated from the stools or urine. The tests are of peculiar value in doubtful cases.

Third Week. In mild cases the temperature usually falls gradually to normal. In the severe cases weakness and emaciation become intense. The pulse becomes more feeble, and the first sound of the heart may be almost inaudible; the urine and feces may be passed involuntarily; frequent perspirations occur; perforation may occur and is often preceded by hemorrhage.

Fourth Week. During this week convalescence is generally established, and there is a gradual abatement of the numerous symptoms. The disease may continue through the fifth or sixth week, and sometimes much longer.

DIAGNOSIS.

In a court of justice a prisoner is regarded as innocent until he is proven guilty. In treating a patient running fever, it is safest to consider him guilty of typhoid until he is proven innocent. The diagnosis must be made from the clinical symptoms assisted by laboratory methods. In a disease which shows not only such variation in its symptoms, but the order in which the symptoms make their appearance, the diagnosis is often exceedingly difficult and may be made only at autopsy.

It is of advantage to have known the patient before the illness, in order that you may note the change in facial expression, mental state and disposition. The onset of typhoid fever is as a rule very gradual; headache, malaise, anorexia and a furred tongue, with a fever which does not yield to quinine, arouse our suspicions. If these are accompanied with, or followed by bronchitis, deafness, a dicrotic or relatively slow pulse, diarrhea, enlargement of the spleen, tenderness of the abdomen and rose spots on the body, we are pretty safe in announcing our diagnosis, at least as far as it can be made from clinical symptoms. Then we can search further for confirmatory evidence.

The blood count is of assistance; the leucocytes below, rather than above normal. In the differential count, the mononuclear cells are increased and the polymorphonuclears and eosinophyles decreased. Any increase in the number of leucocytes contra indicates typhoid fever.

Retention of urine, a musty odor, and tender toes are mentioned as symptoms. Hemorrhage or perforation is, of course, characteristic.

As for the laboratory methods, the demonstration of the existence of the typhoid bacillus in the blood or other parts of the body is of the greatest assistance, as also the obtaining of a positive Widal reaction, provided the patient has not had a previous attack, or has not been vaccinated with typhoid vaccine, as a patient who has been vaccinated should give a positive Widal reaction for at least a year.

Last year I was attending a small boy for typhoid fever, and when his temperature had been normal for a week, I said to him, "Now, Tom, I am going to give you a nice slice of milk toast." Two big tears rolled down his cheeks and in a trembling voice, he said: "I don't want anything as bad as I want to see a boy." I sent for his chum at once. When human affection is stronger than post-typhoid hunger, life is worth living in spite of the bacillus of Eberth.

TREATMENT OF TYPHOID FEVER.*

By GEORGE K. VANDERSLICE, M. D., Phoebus, Va.

Our State Board of Health has admirably emphasized the wide prevalence of typhoid fever in our State, and the fact of its almost invariable occurrence in cities and thickly settled sections and camps, and that it is preventable. These have lead to its axiomatic description by Osler as a "Crime of Civilization," and civilization has set itself resolutely to work to eradicate it. Each case has a National as well as a local and personal importance, and it is along the line of prophylaxis of typhoid that Preventive Medicine has its great work. The treatment of a case is of less importance than the following out of its origin and removal of its source, and the prevention of its spread to others in contact with the patient during his illness or after convalescence.

Prophylaxis.—For purposes of study, we may divide the prophylaxis of typhoid—following in part McRae in Osler—into:

1. General considerations—for the community.
2. Special measures in connection with the patient.

*Read before the forty-second annual session of the Medical Society of Virginia at Richmond, October 24-27, 1911, as a part of the Symposium on Typhoid Fever.

3. Preventive inoculation.

4. Sterilization of patient after convalescence, and management of carriers.

1. General measures have to do with the supply of (a) pure water; (b) pure food and the proper handling of same and preparation for the table free from infection; (c) the destruction of flies, especially the typhoid fly; (d) proper disposal of sewerage matter, and (e) the general function of a Board of Health in finding the source of infection, and in dealing with the same when found, as, for example, in small local or large community epidemics, in closing an infected dairy or milk supply, in giving necessary measures for purification of infected water, in removing and preventing new infections of springs, wells and watersheds, in advocating sedimenting and filtering plants for large water supply, discovering and condemning infected oyster beds and preventing planting of oysters in infected areas, prevention of infection of raw fruits and vegetables by use of sewerage for fertilizing and requiring the proper disposal of sewerage. Finally, the hearty co-operation between local, State and National Boards of Health will eventually give brilliant results, such as have been attained in some European communities.

2. Special measures in connection with the patient should be justly appreciated when we have come to the realization of the fact that a patient with the disease or who has had the disease is the real source of danger, and there is no ground for serious belief in the idea (pythogenic theory) occasionally brought forward that the colon bacillus may undergo a ripening process by means of which its virulence is so increased and altered that it may be converted into the typhoid bacillus, or become the active agent in the causation of typhoid fever¹. If satisfactory and proper handling of each and every case is carried out in early diagnosis, prompt isolation and thorough disinfection, the other measures of a general character will soon be effectual in preventing the spread of the disease, except in one particular which we will consider later.

And in this connection let me urge that you make a prompt diagnosis by all the measures at your command; and then do not avoid the issue by the choice of some dangerous though euphemistic name, as slow fever, continued

fever, bilious fever, typho-malarial fever and para-typhoid. These convey the idea which the family are only too glad to grasp of its being anything but typhoid, as they do not carry the stigma of a possible local infection, nor seem to call for the extraordinary measures familiarly known as typhoid precautions. It is at least easier to explain that you are glad to be mistaken in the case, if not typhoid, than it is to explain why a mother, brother, neighbor or nurse has contracted a "real typhoid" while nursing a "slow fever," etc., and the epidemiology of para-typhoid is identical with typhoid.

What typhoid precautions should be effectual in destroying the bacilli of Eberth coming from a case of fever? Bacilli may be present in discharges from the mouth and vomit, skin, urine and feces; consequently, these discharges should be thoroughly disinfected.

(a) The patient should be isolated, and, as the condition is an infection, as near out of doors as possible, and convenient for the hydrotherapeutic measures necessary, with a screen over bed, or the room, windows and doors, thoroughly screened for flies.

(b) Separate vessels, towels, clothes, bedding, etc., and thorough disinfection by carbolic acid, 1 to 20, and then boiling after use.

(c) Disinfection of all clothing, bedding, etc., with destruction of what cannot be safely and thoroughly disinfected; bedding and clothing should soak over night in 1 to 20 carbolic, or solution of formalin, 3 ounces to one gallon. These should then be boiled in the laundry, and sunned and aired. After the case is over, the mattress should be disinfected by steam under pressure, or destroyed.

(d) Mops and cloths containing all discharges from the mouth should be wrapped in paper and burned. Vomitus should be mixed in equal proportion with carbolic acid, 1 to 20.

(e) Urine should be mixed with one-third amount carbolic, 1 to 20, or made 1 to 2,500 bichloride with tablets or stock acid solution, allowing to stand at least one-half hour, and my practice is then to add lime to take up all the moisture if no water closet is at hand. Hexamethylenamine administered in sufficient dose helps materially to disinfect urine, but typhoid precautions should not be neglected².

(f) Feces should be disinfected by mixing with carbolic, 1 to 20, in twice the volume of stool which should be broken up and allowed to

¹Report of Commission, Spanish-American War, Vol. 1, page 662.

²Meara—*Amer. Jour. Med. Sci.*, January, 1911.

stand several hours; or, instead, freshly prepared chlorinated lime, one per cent., may be used. Bichloride is not reliable for stools. The patient should have anal and genital regions washed with bichloride, 1 to 1,000, after defæcation or urination, and the nurse should use sterilized rubber gloves, kept in bichloride, 1 to 1,000, when cleansing patient or handling discharges, or when bathing. After this she should wash her hands in bichloride, 1 to 1,000, a basin of which should be kept in antechamber accessible to attendants. The bath water should also be disinfected.

3. *Preventive Inoculation.*—The time is coming, if not now, when we shall say to the family, "you have possibly been exposed to the same source of infection as the patient and should receive the preventive inoculation." I believe nurses should receive the inoculation now if they have never had typhoid, and wherever large bodies of men are gathered in camps or in the field, typhoid vaccine should be administered. To be effectual, it may be necessary to administer the same annually; and while some cases are accompanied by symptoms comparable to vaccination—local reactions, adenitis, etc.—these should not deter one from such an excellent measure which, beyond all other methods, should be magnificently useful on a grand scale for those conditions, which painful experience has proven so extremely conducive to the origin and spread of typhoid that the commission to study typhoid of troops in camps in 1898-99 declared the chances were that if a regiment of 1,300 men should be assembled in any section of the United States and kept eight weeks in camp, the sanitary conditions of which were perfect—one or more cases of typhoid would develop, and they believed one-fourth to one-third the men were susceptible. The value of the inoculations may be illustrated by two comparable bodies of men: 10,759 men were in camp in Jacksonville, Fla., June 1st to October 30th, 1898, and had 2,693 certain and probable typhoid. There were 248 deaths from typhoid; 12,801 men were in camp in San Antonio, Texas, March 10th to July 10th, 1911, and one case of typhoid developed. There were no deaths. These had all received the "vaccine" in three doses; 49 cases of typhoid with 19 deaths were reported in San Antonio during this period—a city of 96,000 inhabitants.

The preventive inoculation, or anti-typhoid

vaccination, originated by various steps from observations of Fraenkel and Simons in 1886 that several small non-lethal doses of typhoid bacilli would protect rabbits against subsequent fatal doses. In 1892, Brieger, Kitasato and Wassermann showed that killed cultures were equally effective, the immunizing substance being a part of the body of the bacillus. Through various studies of the processes of typhoid immunity, this was carried to the point of actual immunization of men for protection against typhoid by Pfeiffer and Kolle, and Wright independently in 1896. In 1898, Wright introduced prophylactic inoculation into the British army in India and South Africa, and though these early applications were unconvincing and unsatisfactory in results, in 1904-1907, inoculations were made in German South African campaigns with very favorable results, the vaccine being used in three doses. The negative phase of Wright and fears arising therefrom seem to be proven groundless. In the United States Army during the last eighteen months preceding the Texas manoeuvres, 12,644 persons were vaccinated, five cases of typhoid occurred and no deaths; in the rest of the army unvaccinated, 418 cases with three deaths were reported.

In the United States Army, the following dosage has been used:

1st dose—500,000,000 bacilli in $\frac{1}{2}$ cc. salt solution.

2nd dose—1,000,000,000 bacilli in 1 cc. salt solution ten days later.

3rd dose—1,000,000,000 bacilli in 1 cc. salt solution ten days later.

A single strain of bacillus which has practically lost its virulence for animals is used for the preparation of cultures, and the bacteria are killed by treatment of 55-56° C. for one hour and diluted, and $\frac{1}{4}$ per cent. tricresol added for preservation and prevention of accidental infection.

Immunity lasts one year—by some reports, two. We have not reached the point where every one should receive an annual vaccination against typhoid, but I am of the opinion that doctors, nurses and hospital attendants and laundry workers, who have not had typhoid, and who work where the disease is prevalent, should be so protected. Especially should this be done in construction camps, army and navy and similar aggregations, and young people traveling for business or pleasure in sections where

the disease is prevalent. Future development should give greater and wider power, decrease local reaction, and develop and improve efficiency of this assured method.

4. The problem presented by the typhoid carrier is a serious one—one that must be worked out.

(a) All typhoid cases should have regular examinations made at intervals of about one month after convalescence, and if bacilli are present in faeces and urine after three months, they should be considered chronic typhoid carriers, and be isolated or excluded from working in any capacity that brings them into contact with food for others, either in the handling or in its preparation. Typhoid vaccination has been used with excellent promise, and it seems probable to me that this and some urinary antiseptic will present the proper solution of this problem.

It has been found that large repeated doses of vaccine administered early during convalescence give best results, but this gives no opportunity to discover its effect on the real carrier. The removal of the gall bladder, which has been proposed, seems unnecessarily radical. Irrigation of the bladder has been used by some with good results. Stoner³ quotes a case reported by Irwin and Houston, where an autogenous vaccine was prepared and, after the fourth injection, all organisms disappeared without reappearance, with great improvement in health of patient. Stoner calls attention to the very mild atypical or irregular cases which may be unrecognized and which may produce a carrier; also to the presence of bacilli in those who have never had the disease, and the fact that they multiply in the intestine and may entirely replace the colon bacilli. These considerations add difficulty to the problem of the typhoid carrier.

Treatment of a Case of Typhoid.—In considering treatment, it is necessary first that we understand thoroughly that typhoid is due to the invasion of the body by the bacillus typhosus of Eberth, which is early found in the spleen and blood and, while the gross lesions are referable as a rule to the alimentary canal, these should be looked upon as the local expression of general infection, which should direct our attention (Meara) to the patient as a whole and spare us useless effort to medicate the intestinal canal.

It seems to me the first consideration in all cases should be evident at the very earliest visit of the physician; that a patient, who has any condition which is possibly or probably typhoid, should be put absolutely to bed and at rest, physically and mentally, and the diagnosis made at the earliest possible moment. It is impossible to overestimate the importance of the conservation of the strength of the patient who has to go through a long exhausting condition, and which almost always begins in a debilitated, "run down" condition, itself an important predisposing factor. The seriousness of "walking" typhoid is known to every one, and in proportion the seriousness of a case increases as the patient keeps on his feet.

The best results in the way of absolute rest in bed and isolation can only be obtained by careful and competent nursing, and careful restriction of visitors, the use of a bed pan and urinal. These directions should be insisted upon against the persuasive power of family and friends, for the patient should not leave the bed, nor be permitted to make any unusual effort, and should not be moved from one home to another after the first week, even when the greatest care is assured, except where absolutely unavoidable. Disregard of this has been followed by disastrous results. If the tub bath is used, or when the patient needs to be moved from bed to bed, he should be lifted in a sheet. Further, the attendance of a well-trained nurse will greatly increase the comfort and lessen the danger of bed sores, and of spreading the infection.

The room should be light, with abundant air, if not practically out of doors. The bed should be chosen with a view to the comfort of the patient and the nurse, bearing in mind the length of the disease. A single bed is preferred, of suitable height, and it should be carefully protected by a rubber sheet covering the mattress.

The condition of the body should be carefully watched daily by the physician as regards the skin, mouth, teeth and tongue, and a careful supervision of the handling and general care of the case, however good the nurse. All directions should be written and records should be required of the minutiae of each day's work and occurrences. After the first week, and if the patient is delirious or very ill, a nurse should be in constant attendance night and day, not only to avoid the dangers of getting out of bed, etc.,

but to be in position to discover instantly, if possible, those changes in condition which indicate hemorrhage or perforation, as they require the immediate attendance of the physician.

The mouth should be washed every two hours, before and after feeding, and the tongue and teeth carefully cleaned with an alkaline antiseptic, Dobell's solution or some carbolic wash. Bed sores should be avoided if possible by cleanliness, rubbing with alcohol, rubber air cushions, or air or water bed; if present, they should be thoroughly cleaned frequently, and treated with bismuth, thymol iodide, a protective dressing, etc.

Diet is undoubtedly the most important feature in typhoid treatment. Manifestly the consideration in diet is the serious wasting character of the disease, from 20 to 60 pounds being the loss in weight in cases of average length, in a manner resembling starvation. To meet this, one should endeavor to feed the patient as well as possible so as to diminish the sum total lost at the end of the fever. This purpose is influenced by—first, the loss of appetite, and even anorexia which may exist; second, the decrease of power to digest, and decrease of absorption; third, the condition of the ulcers in the lower part of the ileum, which makes it necessary to bear in mind the character of the residue to pass through this section of bowel.

The time has come when we must investigate the diet in typhoid carefully, for the indiscriminate use of 6 ounces of milk every two hours will not suit present requirements, and there is not sufficient evidence to show that milk gives a soft, harmless, residue. I have found a milk coagulum or curd in the perforation of typhoid at operation. The following points taken from Meara⁴ illustrate the principles involved:

1. The body demands as much energy and heat in fever as in rest in ordinary health, and as a result of fever about 25 per cent. more—that is, 2,300 plus 500 calories, or 2,800 calories, for 154 pounds weight, unless it is taken from the patient's own body.

2. There must be a minimum of protein in the diet, 70 grams per day should be given, but not less.

3. The wastage is due to loss of fat and protein, the protein loss being, of course, the more important.

The destruction is due to (a) starvation, too low diet; (b) fever, this having been shown by experimentation; (c) toxic destruction—by the toxins of the infecting organism.

To avoid loss, we turn to the different foods to make good the loss in protein, turning naturally first to protein itself. If this is given in larger quantity than the 70 grammes necessary for daily use, there is an excess that must be destroyed and eliminated, and the process gives rise to a large amount of heat which cannot be utilized for the purpose of the body, resulting in an extra burden to dissipate this heat.

Fat tends to produce digestive disturbances and diarrhœa and must be used sparingly, and carefully watched. Carbohydrate absorption in typhoid is practically normal, and to this we turn for greatest assistance.

While each patient requires individual attention, the following diet is recommended by Meara: Milk for first twenty-four hours, two quarts; then add one dram milk-sugar to each glass, then one-half to one ounce of cream to each glass, watching this carefully; raw or very rare eggs, gruels, soups, bread, toast, or crackers, ice cream, cup custard. Shattuck, of Boston, goes much further. This diet applies to average cases.

*TABLE OF FOOD VALUES IN UNITS OF 100
Calories.

	gm.	Protein.
Milk, 5 oz.	100 calories....	5
Cream (16 per cent.), 2 oz.	"	1.5
Buttermilk, 9.5 oz.	"	3
Koumiss, 7 oz.	"	5
Whey, 13 oz.	"	3.5
Eggs, 1½	"	10
Whites of 6 eggs	"	24
Yolks of 2 eggs	"	4.5
White Bread (home made), 1¼ oz.	"	3.2
Butter, 1½ oz.	"	0
Sugar, 3 teaspoonfuls	"	0

Where milk cannot be taken, the difficulty is greatly increased. If a severe case with diarrhœa, and if there are stomach disturbances, etc., stop the cream and skim the milk and omit bread and eggs. In cases of hemorrhage or fear of perforation the diet should be liquid only. In severe cases with wild delirium, the patient may have to be fed through a tube, passed through the nose, liquids only, of course, being given.

In the course of typhoid nothing has given greater satisfaction than the systematic use of water internally and externally. In order to

⁴Amer. Jour. Med. Sci., Jan., 1911

*Meara, quoting Prof. Fisher, of Yale, in *Jour. A. M. A.*, April 20, 1907.

understand its use, one should get from one's mind the less important effect of the bath, reduction of temperature, for however beneficial it is, this effect is subordinate to the idea of elimination of toxins, stimulation of heart, lungs and nervous system.

For this purpose the Brand bath or some modification needs no recommendation to any one who has ever used it correctly and judiciously. In the original bath the body was immersed for fifteen minutes in a tub of water placed by the side of the bed. The temperature stated by Brand was 70° F. and not less than 65° F. (if much lower hemoglobinuria may result). In many hospitals 80° is the temperature used. During the bath while in the water the body is thoroughly and continually rubbed. The shirt is removed and, with a napkin placed about the body, the patient is carefully raised in a sheet or hammock used for lifting, and lowered into the water.

In many cases the facilities at hand, lack of help and portable tub, do not admit of a tub bath, and some modification may be tried. A sponge bath, beginning at about 80° and lowering the temperature by the addition of ice or cold water, may be used instead; while applying, the body is thoroughly rubbed, avoiding the abdomen. A wet pack may likewise be used and while intended as a substitute, as ordinarily administered, its form interferes with the friction needed to give the result desired. The drip bath or slush offers probably the best substitute and approaches the prototype of Brand's method (as advised by James Currie, Liverpool, in 1787); the patient is placed in a tub and water is poured from a height of 1 to 3 feet over head and chest. In the drip the bed is elevated at the head and a trough is made of a large rubber sheet by placing bolsters or rolled blankets beneath the rubber on either side, and the water is poured over head and chest, while the nurse firmly and thoroughly rubs the whole body, except the abdomen.

Baths are given every three hours if the temperature is 102.5° F. or over. After any bath the patient is replaced in bed, rubbed with alcohol, and given whiskey or coffee if reaction is slow. Contra-indications are hemorrhage, indications of perforation, or any other severe complication which demands rest and avoidance of any exertion.

Water should be administered in increasing

amounts every hour while awake, lemon juice and orange juice may be added to add taste or flavour.

The circulation should be constantly under observation; when the heart is over 120 and first sound is weak, digitalis is used as a routine by some, while strychnine is advocated by others. Digitalis seems the more satisfactory drug. Caffeine, too, may be used with satisfaction. Camphor and adrenalin may be used in collapse.

Among the forms of treatment of the disease advocated by many, I have no experience with the calomel treatment (Liebermeister), the Woodbridge, iodine, acetozone, magnesium sulphate, or eliminative treatment of Thistle of Toronto, chlorine water, etc. My limited observation of such of these as I have been able to follow in the work of my colleagues and others has excited in me no desire to give them a trial, and the same applies to the use of coal tar derivatives and other antipyretics.

There is, however, a new field which offers abundant opportunities to patient investigators and promises to give in the end a true specific treatment for this fever. This matter has been theoretically considered by Vaughan⁵, who believes the specific treatment promises not to be an antitoxin, but that the residue after extracting the poisonous split product of the bacterial protein by using 2 per cent. sodium hydroxide in absolute alcohol and using the "residue"—the non-poisonous insoluble portion—will prevent a relapse, or if early enough diagnosis can be made, abort the disease.

Along the line of specific treatment of typhoid a number of different efforts have been made:

1. Vaccines have been administered as for immunization purposes, doses from 100 million to 300 or 400 million and some as high as 1,000 million bacteria. Doses are administered every second, third, or fourth day. Theobald Smith has stated that theoretically no advantage can be expected from this, but the experience of other investigators, while inconclusive, is to the effect that the course of the disease is favorably affected, and they report a belief in a brilliant future for the use of vaccines in treatment of this disease⁶.

2. The serum of convalescents from typhoid has been used to protect animals and used by some for the treatment of typhoid patients, though the results of this are unknown. Wasser-

⁵Amer. Jour. Med. Sci., Sept., 1908.

⁶W. F. Russell Boston M. & S. Jour., Jan. 5, 1911

mann points out the lack of complement in human serum, and advises the addition of animal normal serum.

Many sera have been used experimentally, notably those obtained by Chantemesse and Widal from the horse. A culture of bacilli grown on spleen and defibrinated human blood is injected into a horse, and the serum obtained.

The serum from an immunized dog has been used and good results claimed for it.

A typhoid extract of Jez (on an observation of Wassermann), an alcohol-glycerin extract of thymus gland, bone marrow, brain and spinal cord of highly immunized rabbits has been used, and it is claimed with remarkable effects. This is administered by the mouth.

Special Symptoms.—Some of these require enumeration and consideration. First, we may consider those referable to the alimentary tract:

Constipation in the typical uncomplicated case is the rule, and is greatly to be desired. It forms at times, however, an important condition, and in my opinion, distinctly predisposes to relapse. Ordinarily and theoretically this condition should be perfectly met by the use of an ordinary low enema daily or every second day, as advocated by some. In my experience this is frequently ineffectual and, if relied upon exclusively, a very troublesome impaction may result with great difficulty in obtaining relief, and where it occurs most commonly—in early convalescence—may be a cause of relapse.

Where the enema fails to produce satisfactory results, I have unhesitatingly used Epsom salts in divided doses and occasionally castor oil. Cascara has not been satisfactory in my work.

Diarrhœa is much more important. Where there have been 3 to 5 medium liquid stools daily, I have not sought to stop them, but if the movements are large and exhausting, bismuth, and lead, opium and camphor have been my reliance.

I have found great difficulty in cases where large involuntary movements occur with the diarrhœa, and in that case my practice has been to use large colonic irrigations, carefully administered, with very little pressure, using the water about 70°—(in which case it is a valuable hydrotherapeutic measure, comparable to a bath)—and where needed, I have followed it by a starch water and laudanum (10-20 drops) injection.

Tympanites has long been looked upon as a

dangerous and important symptom. When the distension is considerable, with dry brown tongue and delirium with subsultus and carphologia, the picture of the typhoid state is added to the typhoid fever and is a justly alarming toxic or septic condition. I know of no better treatment for this tympanites and dry tongue than turpentine in ten minim doses, in capsules or emulsion, every four hours. Turpentine may also be used by enema for removal of gas, as well as in the form of stupes, cold or hot, applied to the abdomen. The use of an ice bag or coil to the abdomen will sometimes give relief; also the insertion of a colon tube at intervals. In some instances where tympanites has been most marked, it has been due to milk diet and a proper modification of diet has given prompt relief.

Hemorrhage is an important condition, though not as dangerous as it might often appear; however, it calls for immediate attention. There is apt to be a marked drop in temperature, though frequently blood in dark clots is passed twenty-four hours after the bleeding and then recognized for the first time. Often the hemorrhage occurs in large voluntary or involuntary movements containing fresh blood, if early in the disease and small, no special treatment is required; if severe, rest should be absolute, the diet albumin water, the foot of the bed elevated, morphine administered for the purpose of assuring rest, and an ice bag applied. Various remedies are given: Lead and opium, adrenalin, calcium salts, gelatin and horse serum—antitoxin if normal serum is not at hand; 10 to 20 cc. of horse serum is used, or a similar quantity of antitoxin (it must be a serum, and not a globulin); anaphylaxis should be born in mind in the use of the serum, and special care taken if the dose is repeated at an interval of 8 or 10 days. The surgical treatment of the hemorrhage should always be born in mind if the condition is imperative.

The frequent association of perforation (1-5 of them) with hemorrhage should be borne in mind and opium should be avoided, as it seriously masks the most important means we have of discovering this condition.

Perforation is the most serious complication, and should always be borne in mind during and after the second week. If you are carefully watching your patient daily and leave as a positive standing order with the nurse and family to be called at once, day or night, in all com-

plaints of abdominal pain after the first week, the most important aid in prompt diagnosis is preserved. All cases of severe abdominal pain after the tenth day should be considered perforation until proven otherwise by careful observation; occasionally the pain is severe, in others the pain is not of the kind to suggest its seriousness, but there are shades of difference in the patient's condition and appearance even if stupor exists which give excellent assistance and reward close attention. There are sometimes curious accompanying symptoms—a pain in the bladder with desire to urinate occurred in one of my cases, while in another a sudden flow of blood of a menstrual character was coincident. Leucocytosis should be fairly early, but cannot be waited for. Rigidity, vomiting, drop in temperature, constipation and loss of liver dullness are not constant. There is but one treatment and that is surgical. Exploration, under cocaine, if necessary, and closure of the perforation, and the Fowler-Murphy method of after-care.

I have operated upon four cases diagnosed as perforation; one was not perforation, and of the three others in which perforation was found, two made very satisfactory recoveries.

The study of abdominal pain in typhoid is admirably presented in Osler's System by McRae.

Among the nervous symptoms to be mentioned are: (1) Headache, which is treated by ice bag and codeine, and (2) delirium, which has been divided into three characters:

(a) A mild delirium, a simple talking at random, an incoherence from which the patient may be readily recalled by some direct question. This should be treated by ice-cap and usual hydrotherapy.

(b) A low muttering delirium with stupor and the typhoid state and its usual accompaniments. This condition calls for stimulation, digitalis, alcohol and probably large, careful, colonic flushing, with ice-cap and hydrotherapy.

(c) A wild delirium, approaching mania, a very serious condition in my experience, and should be treated by morphine or morphine and hyoscine, and some humane restraint and careful watching. Ice-caps can rarely be kept in place. Lumbar puncture may give relief, not more than 20 cc. every day or two (McRae-Osler). This maniacal condition may be prolonged and continue even after normal temperature.

Among the symptoms requiring treatment may be mentioned sleeplessness; this is a very troublesome symptom and should be treated by hydrotherapy, bromides, trional, chloralamid, morphine, or Dover's powder.

Phlebitis is one of the most troublesome complications, commonly occurring during convalescence or when it seems assured; rest, and elevation, and moist heat are commonly used and later an elastic stocking. Convalescence is delayed by this complication for several weeks.

If the patient is very delirious or stupid, the bladder should be watched and careful catheterization should prevent the troublesome overdistension and cystitis which may follow.

The management of parotiditis, cholecystitis and appendicitis during typhoid or in early convalescence is surgical, and needs no comment other than to urge promptness, as the danger is greater than under ordinary conditions, though during the febrile stage operation is avoided unless the condition is urgent. Time does not permit the discussion of other numerous surgical complications.

The management of convalescence is an exceedingly important part of the treatment of typhoid and requires good judgment between the need to feed the patient properly and the necessity for going carefully to avoid relapse or sudden perforation, which I have seen occur from over-eating more than two weeks after normal evening temperature.

After seven days of normal evening temperature, eggs and toast, scraped beef or chicken may be given, and, if taken safely, the diet may be gradually increased, carefully watching each increase to light diet. The patient may be propped up about this period and out of bed by the tenth day, and probably by the fourteenth day out in the fresh air.

After severe cases with marked nervous symptoms, accompanied by diarrhoea and prostration, solid food may need to be delayed.

The avoidance of excitement and exertion seems to me the most important consideration in convalescence. The strength of the heart should be saved, while iron and strychnine and increasing diet help in the up-building and strengthening process which often requires months to complete. It should be insisted upon that considerable time should elapse before returning to business and other cares.

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OUR NEGLECTED DRUNKARDS — WHAT VIRGINIA SHOULD DO FOR THEM.*

By STEPHEN HARNSBERGER, M. D., Catlett, Va.

The condition of the drunkard is little understood. The popular notion that he is subject to punitive laws is remote from reason. Drunkenness is a disease. This is not a matter of opinion, it is a matter of fact. Let us fix this fact in the minds of the people.

WE LIVE IN AN AGE OF REASON.

There was a time when the physician kept what he knew to himself. Nowadays, however, the tendency of the best physicians everywhere is towards the breaking up of this "close communion." The present growing interest in public health matters is due in great measure to the wonderful spread of a more democratic spirit in education. As the standard of intelligence rises, the need of educating the public along medical lines becomes correspondingly apparent. It is now finding acceptance that a certain amount of public health culture is an integral part of public education and a necessity in every community. The development of this knowledge is as much a duty of the State as is school development. The people, for their own protection, should know how to prevent disease and lessen crime, and they should know that there is a distinction between disease and crime. They should know that drunkenness is a disease. Reason denotes that power by which we distinguish truth from falsehood, and right from wrong, and by which we are enabled to combine means for the attainment of particular ends.

GROWTH IS THE LAW OF ALL INTELLIGENCE.

Intelligence is a dominant, not an inactive or retrogressive force. Intelligence awakens thought. One deep thought evolves another thought and this another, until good from evil and light from darkness spring. Things once invisible are visible. Intelligence means

*Read before the forty-second annual meeting of the Medical Society of Virginia, at Richmond, October 24-27, 1911.

*In connection with this paper, because of the almost criminal neglect of this large class of subjects, the majority of whom can likely be restored by proper treatment to useful citizenship, the Society saw fit to pass the following resolution:

Resolved, That a committee of seven members, to be known as the Legislative Committee on Hospitals for the Inebriate, be appointed by the President; that this committee appear before the next Legislature to secure the enactment of a law looking to the establishment of a farm for the treatment of confirmed inebriates.

The committee appointed consists of Drs. Charles V. Carrington, Richmond; J. C. King, Marion; Stephen Harnsberger, Catlett; Herbert Old, Norfolk; H. S. Hedges, Charlottesville; Greer Baughman, Richmond, and H. U. Stephenson, Toano.

growth—deeper and keener perception—taking a more humane view of things.

CLEARLY A STATE QUESTION.

Physicians are compelled by the exigencies of professional loyalty to espouse reforms that are of State-wide benefit. And it is fact that every reform we espouse is in the interest of the people and to us is a loss of financial gain for all time. I am anxious for an improvement over existing conditions surrounding the drunkard—conditions which are manifestly unjust and harmful. This important problem is clearly a State question, a question with which the State must deal, if it is to be dealt with at all. The field is full of obstacles, but the work is one which has in it the destinies of many people.

AN INEXORABLE LAW OF NATURE.

The State is full of men, and to a less extent of women, who have a natural or acquired predisposition to strong drink and the misuse of toxic drugs. After more or less use of these systemic poisons, the victims lose that something we call "will power." They cannot resist the cravings of debauched desire, which makes of them pride-abased and creatures of humiliation. They become a nuisance to themselves, a menace to society and a tax to the Commonwealth. But this is not the worst of it—poverty, degradation and despair fall heavily on dependent wives and helpless children, "uttering their wants in broken sighs." And yet the burden reaches on—for many of the children of such parents show defective physical, mental or moral force. They are degenerates, in many instances, from degenerate ancestry and their begetting begets degeneracy. They are to all intents and purposes a charge on the State and increasingly so as the years go on. Like begets like is an inexorable law of nature. History, if I mistake not, tells us that the fall of the great Roman Empire was, in great part, due to the vice of intemperance and to its congeners—licentiousness—which still further weakens and ruins.

To take care of and treat such unfortunates, or, if you please, degenerates, is a duty the State owes society. Public policy demands an institution where this rushing to destruction can be stopped. What is more contrary to rational sentiment than to visit one of our insane hospitals and see the hundreds of inmates there, some insane, some epileptic (at least formerly the case), some idiotic, some alcoholic and a few criminal—all mingled together in one enclosure

as if they were all insane; or else to see them languishing in jails, where only criminals should be found. It is wrong. It is the lingering touch of dark days of ancient history. If it is not the stamp of heredity, it is just as bad—it is the impress of tradition. Tradition has done more to hinder enlightened development than any other single force. It is to our shame that

"The fact, and not the vision of the fact,
Is their unending anguish."

NOT SUPPORTED BY REASON.

The charge that a man can keep from drinking if he wants to will not do. The tuberculous, on the same grounds, could keep from being infected. And perhaps I might, with apparent good reason, go further and say that we could avoid all preventable diseases if we made up our minds to do it, because few of us would get sick if we would live as we should. This wide-spread notion that a drunkard drinks simply because he wants to, not only is not a fact, but it stands as the hardest obstacle to be overcome in any movement for State aid, care and treatment of the inebriate and drug habitue. But this inborn mental kink should unravel under the searchlight of modern intelligence.

THE STATE MAKES IT POSSIBLE.

When we come to think of this subject in its true light, we are brought to consider that it is the State's duty to care for and treat these unfortunate persons, because the unmaking of them is in no small measure due to the State's too eager grasping after the easy revenue that directly or indirectly flows into its treasury from the license tax on bar-rooms and allied sources. Then, why charge a man with crime when all the while the State is doing that which is sure to make him commit crime. Surely, the State makes it possible.

A QUESTION OF STATE ECONOMY.

The object of this paper is an appeal for legislation designed to diminish drunkenness and the drug habit and to increase the comfort and joy of life, believing human efficiency, health and happiness is the pre-requisite of a strong and loyal people. The State can well afford to care for and treat its drunkards, because it will change a non-producer into a producer—turn a liability into an asset. A State grows in wealth and greatness as it multiplies its producers. Therefore, it is not charity we ask. This question is a sound fiscal proposition.

PUNITIVE MEASURES DESTROY CHARACTER—
REMEDIAL MEASURES BUILD CHARACTER.

Hospitals for the insane, where many drunkards are now housed, are not the place for them. They should be in institutions to themselves—out on a farm where they can find agreeable employment and the medical care and treatment they require. To be thus cut off from temptation is of special advantage. Suggestion impresses most alcoholics. Suggestion works well where several patients are endeavoring together to break the habit. The psychic effect of such an institution for habitual drunkards would be in itself a valuable therapeutic asset. Isolation and pleasant employment would give zest to prudent care and rational treatment, and make of them good and respected citizens. It is a well recognized fact that the reformed drunkard, in most instances, makes a dependable citizen. Inebriate hospitals are essentially character builders.

SOME ILL EFFECTS OF DRUNKENNESS.

We are told that "Inebriety is the active cause of from 15 to 50 per cent. of all insanity; from 30 to 80 per cent. of all idiocy; from 60 to 90 per cent. of all pauperism, and from 50 to 85 per cent. of all crime."

The report of the committee appointed by the Mayor of Boston says with regard to the habitual drunkard or "rounder": "Let no one misunderstand this pitiful wretch, the 'rounder'—physically and morally debauched is the product of the existing system. He represents the closing act in a moral tragedy, in which society plays the villain in the guise of justice and law, and the poor man is the victim, with the imprisonment of a hitherto respectable first offender for the first official act in the tragedy; the corrupt and compromising association of the prison for the second act; tainted reputations and decreased earning capacity for the third; discouragement and relapse for the fourth; and so on to the end of the miserable business—first moral and then physical death."

The habitual drunkard is the cause of the largest single item of expenditure of police departments, police courts and jails and work-houses. The cost of the care given to inebriates by municipal hospitals, simply to relieve them of acute conditions brought on by the excessive use of alcoholic liquors, is very large; and charitable organizations and institutions are taxed to their utmost in attempting to relieve

families whose pauperized condition is caused by habitual drunkenness.

HOW IT IS TO BE DONE.

No careful student of conditions but must be convinced that there will be no improvement in the tone of our public policy towards the drunkard until present misconceptions are corrected. The hope of this movement lies in the education of the people, and no aid can be hoped for from the halls of legislation not urged by the people. The active factor of every such reform is the *vis a tergo* at home; and that dominant factor at home is the interest and influence of the good women of our State. We must look to them and use such honorable means as will get their help, if we expect to succeed. The very fact that we are making this effort, once that it is known over the State, will be to the despairing wives and children of our thousands of drunkards the soothing undertones of sympathy. It will lighten their burdens and brighten their lives.

CONCLUSION.

Stolipin's last words were, "Light up"; Goethe's were, "More light." Light up, more light is the need in Virginia—light on the real condition of the drunkard and drug fiend. The means to be employed in the inception and creation of a State institution for inebriates are—first, to gain the confidence of the people, and, second, to develop a genuine spirit of co-operation between the people and the profession. Confidence is not gained by mere statement of facts. Statements must be proven to be facts. Therefore, this preliminary paper must be followed by such data as will show that punitive measures are wrong and that remedial measures are right.

"It is easy enough to be prudent,

When nothing tempts you to stray;

When without and within, no voice of sin,

Is luring your soul away;

But 'tis only a negative virtue

Until it is tried by fire,

And the life that is worth the honor of earth

Is the one that resists desire."

DIAGNOSIS OF PELVIC INFLAMMATION.*

By WILLIAM W. PENNELL, M. D., Mount Vernon, O.

In this outline of the diagnosis of pelvic inflammation, a wide construction has been placed on the word pelvic, applying it to all

*Read before the Knox County, Ohio, Medical Society.

the tissues of that portion of the body between the iliac spines to the attachment of the legs. Comprising every sort of tissue and devoted to the performance of the highest of important functions, the importance of this region cannot be estimated, nor the effect of its poor health on the remainder of the body computed. None of its arcana should remain uncovered, none of its departures from physiologic standards be too trifling for the enlistment of our best endeavors that we may restore them.

Every known method of diagnosing disease can be used in ascertaining the pathologic state of the pelvis. In obscure, intricate cases, a failure to apply every one of these invites error. A clear diagnosis should antedate any attempt to battle with disease. The successful diagnostician makes the successful physician and the eminent surgeon. To be able to bestow the right name on the sum of a certain number of pathologic phenomena may uncover its cause, and will most certainly direct its treatment. This sum may be the result of cause or causes; and this cause or these causes, the diagnostician never forgets, have their phenomena modified by the characteristics of the subject in which they arise, determining in a large degree the profoundness of their effect, the aspect which this effect assumes, and its ultimate result as to duration and termination.

Aside from direct causes of disease, which the physician has to consider, there are at least two others which, in a routine way, come in for study—those psychic or personal, and inherited factors that are ready to attach themselves to every pathologic process, regardless of cause. A lucid, creditable anamnesis should always be considered and accepted, provided that a differential diagnosis does not alter its terms.

As in the court-room where every witness may give testimony, but not evidence, so in the physician's office, or at the bedside, each interrogated organ or tissue will give some sort of reply, whether relevant or not. The putting of a proper estimate on such testimony affects the value of his opinion of the case at hand.

Like diseases of the general body, so the symptoms of diseases of the pelvis are classed as subjective and objective. Either class may be difficult of interpretation, rendering diag-

nosis hard to obtain. As intimated, the statements of the patient may be at variance to the findings of the diagnostician. In this dilemma, if the physician has avoided all known sources of error, he should accept his findings. For sundry reasons, a patient will omit valuable points in personal history as to habits, diseases, exposures, injuries, and the like; or, on the other hand, may embellish his story to a good listener, not to purposely mislead, but to feed a spirit of vain glory.

Diseases here, as elsewhere, do not always pursue a typical course; they are often anomalous, erratic. As seen through my own senses, individuals not wholly susceptible to a given disease, persons whose resistance to the invasion of disease is not entirely overcome by the morbid agent, present diseases in anomalous forms. Then again, the continued presence of a previous malady may so modify the new disease as to radically change its features, or the new disease may be the further extension of the older, thus becoming a complicating circumstance, or sequel, of an unrecognized cause, of which it is but a symptom; as an old and forgotten appendicitis, which, in the arrangement of its anatomic relations, includes a deeper pelvic connection, may inaugurate another inflammation. Further, a condition in the pelvis that has given no direct suspicion of its existence can be the cause of a morbid process in a distant part so violent, so overshadowing, as to be discovered only in the unsatisfied search for cause. In this connection is cited the case of a woman, aged 43, who had always had good health. Suddenly, she was seized with a sharp cholecystitis—pains, nausea, vomiting, distension of abdomen, tenderness, prostration, obstinate constipation, temperature 104°, a deep jaundiced state quickly supervening. Three months previously, she had menstruated for the last time. Having been somewhat irregular, and thinking she must be approaching the menopause, she let pass the small discomfort she experienced the first time the menses failed to appear; this was repeated the second failure to appear; but, when the time came for the third appearance she was seized as above related. On investigation the uterus was found extremely anteverted, enlarged, but not particularly tender; the pelvic space was unusually roomy, allowing the fundus to descend lower than the cervix, the

posterior wall of the vagina being well drawn over the cervix. On repositing the womb, a bloody, foul smelling discharge began to ooze from it. On dilatation a quantity of putrescent blood-clots were removed, the whole being suggestive of retained menstrual discharge. Needless to say, the woman's recovery was prompt.

Simplicity, deficiency of vocabulary, as well as wilful determination to mislead, may hinder the efforts to unravel the mystery of a certain complaint. Hence, the necessity of patience when dealing with those handicapped by ignorance; despite their efforts to co-operate they are apt to mislead. Again, in pelvic disease as in no other region of the body, the frequent motive is to find relief without disclosing cause; under these circumstances, if surrounded by education, the motive finds an ally in education and will defeat every, but the most skillful scrutiny. So cunningly arranged do some of these people have their details, when apparently giving every aid within their power to fathom their troubles, that nothing short of a fatal termination near at hand will cause them to be honest in their answers. This brings to memory the case of a severe but unexplained peritonitis in a woman, who declared that her malady must have been caused by over-work when near her monthly period; a consultation of physicians decided that she must be mistaken, and that her sickness was likely to be fatal. On this, she confessed that, imagining herself to be pregnant, she had inserted a knitting needle into the womb with great force, sharp pain and the present illness resulting. Drainage showed that she had penetrated the peritoneal space, saving her life likewise.

So far as possible, every examination should be made when the patient is not under the influence of drugs; this does not apply where the physician is fully advised as to opiates or anesthetics used to calm excitement, or to facilitate examination. Yet the fact remains, the nearer the condition into which disease plunges a patient is the state in which the physician finds him, the more accurate will be the estimate. A combination of the symptoms of disease and the symptoms of drugs has produced a series of phenomena wholly at variance to those of either factor acting alone; and this series has been regarded as a further complication in that illness. This

very combination has produced more disparity of opinion among physicians than the inroads of actual disease. Of course where the investigator is fully familiar with both the disease-symptoms and drug phenomena, as well as their combination aspects, the matter is not so difficult. Many drugs are eliminated slowly, hours and days elapsing between the administration and their final exit from the body. Effect can only stop with complete elimination. If now another, or even another still, is given before the first has ceased to act, a hopeless jumble of activities, or indolences, has been produced, and then the attending physician's brain may become befogged through the dazzling panorama presented.

If the full confidence of the patient can be secured, and this can be done, usually, if the physician is a close observer of human nature, many of the dark places that obscure our mental vision will have a flood of light flowing into them.

For convenience the distinctive features of the various pelvic inflammations are presented in parallel columns.

CYSTITIS.	IRRITABLE BLADDER.
1. A local bacterial infection.	1. No infection.
2. Urine contains micro-organisms.	2. No micro-organisms.
3. Urine contains pus.	3. No pus.
4. Frequency of urination.	4. Frequency of urination.
5. Frequency of urination when in bed.	5. Can sleep all night without urinating.
6. If urine is not alkaline when voided, it rapidly becomes so.	6. Remains acid.
7. Pain, great before urinating, is lessened during flow, markedly increased at its close.	7. Constant desire to urinate relieved by micturition.
8. Cystoscope reveals inflamed mucous membrane.	8. Reveals healthy mucous membrane.
9. Specific cystitis, urine contains gonococci with history of infection.	9. None.
10. Desire to urinate in specific cystitis is urgent, speedily leading to incontinence.	10. Desire to urinate constant, not urgent, no fear of incontinence.
11. Constitutional disturbance in proportion to inflammation, becoming less as the disease recedes.	11. No fever; there is mental depression, even neurasthenia.
12. General health rapidly declines.	12. General health remains good.
13. Retention may occur from obstruction or sacculation.	13. No retention; no sacculation.

This brings us to pelvic peritonitis and pel-

vic infections in general. Here, as in few other instances, an early correct diagnosis is essential to successful treatment, because the difference of a few hours in becoming acquainted with what ails the patient is often the difference between life and death. The presence of a tumor in the pelvis claims our best efforts to discover its cause; if infected, whether streptococcic, staphylococcic, gonococcic, syphilitic, or tubercular. The high mortality after operations where the infective agent has been streptococcic contrasts unfavorably with those of the other infections; and, aside from deductive reasoning, in the absence of microscopic findings, as it is not always possible to foreknow whether the operator will or will not encounter streptococci, their characteristic should be borne in mind.

STREPTOCOCCIC.

1. Occurs after abortion, an operation on or in the uterus, or after normal labor.
2. Focus of infection an abrasion or injury.
3. Invasion through lymphatics with tendency to follow layers of connective tissue and fascia.
4. May develop rapidly, or lie dormant for months in pelvic tissues.
5. Parametritis usually results.
6. Exudate unilateral or asymmetrical; usually stony hard, containing many small abscesses; uterus fixed in solid mass.
7. Adhesions may exist between all the pelvic organs.

GONOCOCCIC.

1. Follows gonorrhœal infection of the genital organs.
2. Presence of specific disease of genital parts proclaims source of infection.
3. Through mucous membrane.
4. Generally, gradual extension; may be latent.
5. Salpingitis usually results.
6. Salpingitis bilateral; usually superficial to any pelvic mass.
7. Adhesions are confined to abdominal end of tube.

In the differential diagnosis of these two infections, the weight of reliance for streptococcic infection must be placed on the denseness of the mass, the immobility of the uterus and its adhesion to the pelvic walls by the exudate, because every parametritis is not streptococcic; gonococci occasionally spread through lymph channels, and they have been found in connective tissue. The earlier operative procedures are resorted to, the better for the chances of the patient; in the present state of our knowledge reliance should not depend on antistreptococcic serum—there being no contra-indication to its use, especially if septicemia has already occurred, in addition

to drainage. In gonorrhœal pelvic infection I have never seen a fatal tendency.

The differential points between non-puerperal, puerperal, and appendicular exudates are sufficiently sharp to distinguish them from simple exudates, and a pyosalpinx or an ovarian abscess need not be taken for one or the other of them.

PARAMETRIC EXUDATES.

1. These exist for a short time, and are either resorbed or they suppurate.
2. Parametric exudates, corresponding to the shape of the cul-de-sac, lie between posterior wall of vagina and rectum, existing as transverse cylindrical tumors, immovable.

NON-PUERPERAL EXUDATES.

1. An exudate of more than six months' duration is not para- or peri-metric, but purulent, especially if a pregnancy or an operation has not occurred for years.
2. Pyosalpinx or a pyo-ovarium draws away posterior vaginal wall, is sausage-shaped or spherical, and may, in narcosis, be pushed over the pelvic wall.

Should there be a combination of pus with a pelvic exudate, the exudate can be felt from below, the adnexal pus from above.

The discovery of the anatomic relationship between the appendix and the broad ligament, permitting the free passage of fluid from one to the other, explains the relationship of appendicitis to adnexal inflammation. These conditions having so many symptoms in common, their differential diagnosis is often attended with difficulty. In examining, it is well to remember, especially in first attack:

APPENDICITIS.

1. Previous health good so far as local disease is concerned.
2. Onset sudden; acute pain, frequently localized, not radiating down the thigh.
3. Usually, no chill.
4. Temperature may be high; usually moderate.
5. Unilateral rigidity of abdomen.
6. Examination fails to find exudate before third or fourth day.
7. In complicated cases, vaginal and rectal touch rarely discover tenderness.

ADNEXAL INFLAMMATION.

1. In tubo-ovarian disease, previous history of gonorrhœa, or infection after abortion; disturbances of menstruation, dysmenorrhœa.
2. Onset slow; pain dull, continuous, radiating.
3. Chill may be absent.
4. Temperature rarely elevated.
5. Rigidity absent unless general peritonitis exists, then rigidity is general.
6. Tumor present from first, but vaginal palpation may be necessary to find it.
7. Vaginal and rectal examination always discover pain, particularly if attempts are made to move the uterus.

It is necessary that these conditions should be differentiated, because the appendicitis may require prompt surgical attention. In a large percentage of cases the appendix will be found to be infected from the tubo-ovarian disease. This very variable organ is the most frequent point of origin of pelvic peritonitis in males, and must be accorded its share in females, especially in those women where neither puerperal, gonorrhœal, or tubercular causes can be found. Of course, this statement holds only where the situation of the appendix is such as to permit such infection; and, on account of the appendicular adhesions, abscess and perforation, being wholly within the pelvis, appendicitis may be a pelvic inflammation, and may have had its origin in a preceding tubo-ovarian inflammation; likewise, the situation of a chronically inflamed appendix can reverse the process of infection. Aside from the appendix, the most frequent sources of pelvic inflammation are gonorrhœal, puerperal, and tubercular infections of the uterus and Fallopian tubes, the latter far exceeding the former in number. In the adherent and closely matted fimbriae which clasp the ovary, thickenings occur, as also do multiple abscesses, the tubes practically being converted into retention cysts for pus and cheesy materials, all of which interfere with the much desired clear diagnosis. A rigid adherence, however, to the principles given will throw light into many a dark corner.

Then, too, if the profession was forever rid of such terms as "puerperal peritonitis, pelvic peritonitis, pelvic cellulitis, septic peritonitis," and "suppurative peritonitis," the mental atmosphere would be very much cleared; particularly when we can, through diagnostic processes, substitute staphylococcic, streptococcic, gonococcic, and tubercular inflammation, taking care to recognize the dominating agent in a mixed infection, and making surgery the first resort in all surgical cases, medicine the first resort in all medical cases.

Streptococcic infection of the pelvic peritoneum should have an early diagnosis, because, with the development of septicæmia, there comes general peritonitis with its terrible consequences—nothing short of free drainage, early made, will do the least good. In other cases where the infecting agent is staphylococcic, or a feeble streptococcic infection in a person whose bodily resistance is great, the

inflammation which follows will be local, ending in suppuration, and not requiring active surgical interference.

When from any point, such as tubercular uterus or Fallopian tubes, there occurs an infection of the pelvic peritoneum, the tendency is to general peritonitis, because the peritoneum is peculiarly susceptible to such infection. There are cases, however, where the infection remains local for long periods of time; and it should be remembered that such local conditions, through their toxins, may produce a general disturbance, which, unless a clear conception of the original disease is obtained, may be mistaken for other and less harmful maladies. Tubercular infections, here as elsewhere, are subject to the law of limitation, but bacteræmia once set in motion is difficult of control.

The differential points of pelvic tubercular infection and other infections, such as streptococcic, staphylococcic, gonococcic, or the bacilli coli communis, proteus and influenzae, are as follows:

TUBERCULAR.

1. Age no barrier; before puberty the sexes are equally affected; after that, the female predominates.
2. Onset may be sudden or be so gradual as to escape attention. When sudden, there is afternoon rise of temperature, gradually increasing for two or three weeks. Prostration is progressive, tenderness over the hypogastric or iliac region; liable to be mistaken for typhoid fever or appendicitis.
3. Usually no previous history; may have extended from another organ.
4. Temperature may remain subnormal with little variation.
5. Small nodular masses are to be found along

OTHER INFECTIONS.

1. Age no barrier, except between the ages of 16 and 45 females predominate. From this class exclude gonorrhœa unless there is a gonorrhœal history.
2. Onset, usually a chill, fever, prostration, rapid pulse, restlessness, headache; direct effect on heart and nervous system.
3. Previous history of abortion, attempts at abortion, labor at term, uterine manipulations, gonorrhœa, excessive constipation, exposure; in men gonorrhœal vesiculitis, prostatic cystitis.
4. Temperature rarely subnormal except when near death; may rise one or two degrees after death.
5. In gonorrhœal pyosalpinx the tubes are

the tubes, on the broad and other ligaments; hypogastric lymphatic glands are enlarged.

6. Cutaneous and ophthalmic tests usually demonstrate tuberculosis.
7. A protracted, unexplained irritability of the bladder or cystitis may denote tuberculosis either of that viscus or of the prostate, in the posterior wall of the bladder simulating stone. Examination of prostate reveals numerous hard nodules varying in size from a pea to a small chestnut.
8. Microscope reveals bacteria of tuberculosis, if discharges contain them.

smooth, curved, oval; in the other infections a hardened mass, holding the uterus immovable. In both sexes the exudate interferes with movement of the bowels.

6. Tests negative.
7. Bladder symptoms self-evident; neither sound nor cystoscope discover stone.
8. Microscope reveals other organisms.

The reflex neuroses of the stomach from pelvic disease are not distinctive enough to classify them, but in every case of gonorrhœal salpingitis, which I have seen, there was more or less constant history of morning sickness like that in pregnancy; in fact, if a patient, non-pregnant, complains of morning sickness, I take it as a presumptive symptom of specific disease of the uterus and tubes. If a male complains in like manner, gonorrhœal vesiculitis is presumptively present. Indeed, success in controlling the unpleasant symptom was reached only in controlling the specific disease.

Analyses, Selections, Etc.

Liberal Diet in Typhoid.

Every one of us is familiar with the emaciated appearance of a convalescent typhoid patient. In fact, during the early convalescent period it is difficult to recognize an intimate friend. This loss of weight was heretofore considered to follow as a necessary penalty of the disease. Like many other notions which are inherited from bygone days, it was accepted without question by the profession. Recently, however, it has been found that the great loss of weight incident to typhoid fever is unnecessary, and that the starvation diet to which our

patient have been forced to submit is unscientific and harsh. Little by little a better understanding of this difficult question has been acquired, and to-day, with a more liberal diet, the characteristic starved appearance of the convalescent typhoid victim is happily becoming a relic of the past. Miller, in the *Illinois Medical Journal* of September, traces very interestingly this evolution from starvation to the liberal diet of to-day. He notes that progressively typhoid patients have received an ever-increasing diet until to-day, by scientific feeding, when the patient gets out of bed his loss in weight is hardly appreciable. Miller states that a man of 150 pounds with typhoid fever requires 5,000 calories daily to maintain his weight, or double the amount necessary to maintain a healthy person of the same weight. When a patient received this amount of food there was found to be very little loss of weight, if any. Sometimes during the height of the attack, there would be a slight decrease, but with defervescence this was soon made up. From the opportunities afforded him in the Cook County Hospital, he was able to determine that the fats and carbohydrates were the best protectors of the body proteids, and that at least two-thirds of the diet should be carbohydrates and not more than one-third fats. The milk and eggs contain sufficient proteids for the needs of the patient.

Miller, however, does not generally aim at the entire eradication of the loss of weight. In fact, he does not think this desirable. He merely endeavors to prevent an undue loss of weight, which he finds he is able to accomplish, as a rule, by the giving of 3,000 calories daily. This amount of nourishment he obtains from food of high nutritional value, such as milk, cream, eggs and sugar. The milk he gives in the form of cream soup with oatmeal, rice, cornflakes, etc., or the milk may be heated and arrowroot or cornstarch added.

According to the author, it is essential to administer at least a quart of milk and a pint of cream daily. This he accomplishes by using, as above outlined, or in coffee, chocolate or cocoa as a vehicle. This is supplemented by the addition of four or five eggs daily, which may be taken raw or in the form of egg-nogs, soft-boiled, poached, or as custard, or as ice cream. As the carbohydrates offer the best protection from the loss of body weight, it is wise to get daily eight ounces of sugar into the body of the

patient. If the patient has an aversion to sweets, the writer orders cereals, bread, baked potatoes or any root-vegetable in finely divided form to make up for the decreased amount of sugar.

This diet will give about 3,000 calories—milk and cream, 1,600; eggs, 350; sugar, 1,000. Dr. Miller also allows the addition of one and one-half ounces of fat crisp bacon daily. This has a high food value, 250 calories to the ounce, and is relished by the patient. If all the lean is removed and the fat properly masticated, he finds it does no harm.

The above outlined plan of feeding typhoid patients has been tested by others than Dr. Miller, and has been found entirely safe and reliable. The patient has been found to make a better convalescence and to regain his strength more rapidly. As in the case of the author, the other advocates of this method of liberal feeding have noted that it is the sugar which exerts the beneficent influence in maintaining the body weight. To get a sufficiency of this substance into the patient often requires ingenuity, but with perseverance and a varied change of vehicle it can be accomplished.—(*Editorial, Maryland Medical Journal*, November, 1911.)

The Parathyroids and Calcium Metabolism.

It may be regarded as established beyond reasonable doubt that a relationship exists between tetany and the removal of the parathyroid glands. MacCallum and Voegtlin have suggested that this relationship may be due to the influence of the parathyroids on calcium metabolism. For they found that removal of the parathyroids was followed by increased calcium excretion with diminution of the calcium content of the blood and brain, and that the tetany following extirpation of the glands could be avoided by the injection of calcium salts. This relationship between the parathyroids and calcium metabolism has recently received striking confirmation by Erdheim and several co-workers, who have studied the effects of parathyroidectomy in white rats. In rodents, the incisor teeth present the peculiarity of constant growth, resembling skeletal bone in this respect, so that they afford remarkable opportunities for the study of details of calcium deposition. During a series of experiments on the relationship between parathyroid extirpation and tetany, Erdheim

noticed that the incisor teeth of rats became liable to repeated fracture, and a careful study of this phenomenon has led to several interesting observations. In the normal incisor tooth of the rat the dentin forms the principal portion; a conical pulp-cavity pierces this longitudinally, and a narrow zone of dentin adjoining this cavity is normally undergoing calcification, while the greater part has already received its complete deposit of calcium. On removal of the parathyroids, it was found that calcification of the dentin at once ceased more or less completely; the portion already hardened underwent no change, but as the effects of use wore down this older part, the new uncalcified dentin taking its place lacked strength, and fractures followed. Imperfections in the enamel deposit also occurred, though at a later period than the alterations in the dentin. By regulating the time between the extirpation of the glands and examination of the tooth, all transitional stages between the normal tooth and one almost completely decalcified could be obtained.

Still more interesting results followed the transplantation of the parathyroids. Owing to the great difficulty of getting successful growth of the transplanted organs in a second animal, the earlier work was limited to the transference of the glands from the neck to the abdominal wall. This was successfully accomplished in nine cases, and in each of these there was found in the incisor teeth a zone of uncalcified dentin, corresponding to the period of parathyroid quiescence, interposed between two layers of normal dentin. Transplantation of the gland from one animal to another in which the thyroids had been previously extirpated was successful in only one instance. In this animal, some time before the examination of the teeth, the transplanted glands were also removed. Corresponding to the removal of the animal's own organs, there occurred a zone of uncalcified dentin. Another partially calcified zone indicated the period of activity of the transplanted glands, and a third zone, completely lacking in calcium salts, recorded that of the second removal.

In the face of such evidence, there can be little doubt of the influence of the parathyroids on calcium metabolism. Additional proof has been afforded in the case of the skeletal bones by Erdheim and by Canal, who have both shown that under the influence of removal

of the parathyroid, callus formation is greatly retarded, owing almost entirely to deficient calcium deposition.

Erdheim does not hesitate to call attention to the similarity between his findings and those in rickets and osteomalacia. As additional links between the two processes, he cites the relative frequency of hypertrophy of the parathyroids in osteomalacia and the almost exact similarity in the changes in rachitic teeth and those of his animals. Although a connection between rickets and tetany has long been noted, it would as yet be premature to ascribe all cases of both unreservedly to lesions of the parathyroids. It has been found by Badt and Klose that changes analogous to those of rickets and osteomalacia occur in young dogs after removal of the thymus, so that, at present, the pathologic basis of these diseases cannot be stated with any degree of certainty. However, it is possible that as complicated a process as the calcium metabolism of the body may be influenced by any one of several factors, and that the similar clinical findings may have varied sources, as, for instance, is the case with experimental diabetes. Apparently, however, the problem of the etiology of rickets and osteomalacia is in a fair way toward being made clear, and its ultimate solution should be merely a matter of further work along lines already indicated.—(*Editorial. Journal American Med. Assoc.*, October 21, 1911.)

Bacillus Coli Infection.

Reginald M. Rawls, New York, states that in a certain proportion of healthy adults the *bacillus coli* is taken up by the lymphatics and blood-vessels of the intestines and carried to the kidneys. The number and virulence of these germs depend on the amount of intestinal disturbance and the strain of bacilli. The greatest predisposing causes of *bacillus coli* infection of the kidney are interference with the flow of the urine, back pressure, and a lack of free secretion. The early symptoms are not characteristic and may be mistaken for those of a mild cystitis, although the real seat of infection is higher up in the urinary tract and of more serious pathological import. The symptoms are those of a typical malarial seizure: chills with a continued fever, pain and tenderness referred to the kidney and bladder, and abdominal distension. There may be uncontrollable vomiting. An ordinary urinary ex-

amination is not sufficient to detect the bacilli, a bacteriological examination being necessary. These symptoms simulate several other general conditions. There is a tendency to spontaneous recovery and the prognosis is good. Treatment consists of rest in bed, with an unirritating diet, free catharsis, alkalies for the urine, and the use of autogenous vaccines and sera. Anthony Bassler, New York, describes four cases of chronic dysentery not due to the ameba or the Shiga bacillus, but apparently due to the colon bacillus, which had penetrated the intestinal walls. He gives the results of examinations of the feces. He concludes that there is a chronic dysentery due to the *bacillus coli communis*, not uncommon in temperate climates. The sera from these cases strongly agglutinated the organisms obtained from the affected subject, and more so than *bacillus coli* from other sources. These organisms were unusually fatal to lower animals. They existed in large numbers in the mucus of the intestinal tract and destroyed the mucosa locally, producing ulcers of the intestinal walls. The cause of these cases is a highly virulent *colon bacillus*, strongly hemiparasitic, and capable of overcoming the resistance of the body tissues.—(*Medical Record*, October 7, 1911.)

The External Malleolar Sign.

C. G. Chaddock and A. H. Deppe, St. Louis, report their experience with the "external malleolar sign" of Chaddock, which is described as follows: To determine its presence or absence the patient must sit or lie with the lower limbs extended and relaxed and wholly exposed. Relaxation of the muscles of the legs and feet is very essential in doubtful cases, and if possible the limbs to be tested should not be compressed or touched in any way except at the point chosen for application of the stimulus. The irritation of the skin is best done with a dull steel point (like a dull-pointed nail file). The area to be tested is the groove which outlines the external malleolus. In this groove the point of the instrument used should be drawn from behind forward until the depression between the malleolus and the cuboid is reached. This depression seems to be the most excitable part of the area. The degree of irritation employed should always be varied from slight stroking to rather severe scratching with considerable pressure, though it is never necessary to cause pain. Normally, this stimulus

causes no movement whatever of the toes. The abnormal reaction consists of extension or fanning of one or more or all the toes; a movement of flexion observed in a few cases had the same pathological significance, says Chaddock. It may be found with a negative Babinski. A striking peculiarity of the external malleolar sign, say the author, is that with a unilateral Babinski it is the rule to find the external malleolar sign on both sides. In a series of 99 cases of dementia paralytica, Babinski's sign with the ankle sign was found eleven times, the ankle sign was found single or double eighty-six times; neither sign thirteen times. The phenomenon of Babinski certainly occurs without the presence of the external malleolar sign, though rarely, says Chaddock; and thus is shown, as by variations of association, the independence of the two signs. Study of their associations and dissociations may afford valuable diagnostic facts.—(*Inter-State Med Journal*, October, 1911.)

Appendix Dyspepsia.

Formerly the cause of chronic stomach trouble was always sought in the stomach itself and our therapeutic measures were always aimed directly at that organ. It is only in recent years, says W. F. Cheney, San Francisco, that a chronically inflamed appendix or gall-bladder has been recognized as a cause of dyspepsia. When we see how many observers, working independently in different parts of the world, have come to similar conclusions regarding the existence of an appendix dyspepsia, we are forced to believe that the condition must hereafter be reckoned with as one of the possibilities in all chronic disturbances of digestion. If we seek for any typical history of this condition we shall be disappointed, says the author. Some cases show in their history a striking resemblance to gastric ulcer, with epigastric pain after eating, flatulence, belching, sour eructations, nausea and vomiting, and even hematemesis at times. These are the cases, as Graham has said, which were needlessly subjected to a gastro-enterostomy for "medical ulcer," there being found at operation no demonstrable lesion in the stomach. In other cases, says Cheney, the history is that corresponding to hyperchlorhydria, with heartburn, water-brash, flatulence, and nausea, but without pain or vomiting. It seems probable that many of the cases of "sour stomach" resisting all forms of

medical treatment are due to chronic appendicitis. In fact, this has already been proved in those cases in which the removal of a chronically diseased appendix has been followed by a relief of all symptoms and a return of the gastric secretions to normal. A third group of cases complains of heaviness and fullness after eating, flatulence, belching and regurgitation of food, an inability to take more than a small amount of food at a time. These cases may show a normal stomach analysis and the symptoms seem to be due to pylorospasm. The author has not always been able to get a history that points to the appendix as the seat of disease, but believes that the so-called "bellyaches" of childhood are very often due to appendix inflammation which lays the foundation for the future dyspepsia. Another important point in the diagnosis is that the epigastric pain and other gastric symptoms are either excited or increased by exertion. Again, the time of onset of the pain is usually irregular in contrast to the striking periodicity in gall-stones and ulcer. Unfortunately the occurrence of hematemesis, or blood in the stools, does not speak absolutely against the diagnosis of appendicitis; for evidence is accumulating, says Cheney, that the occurrence of hematemesis can no longer be considered as speaking for gastric ulcer in the differential diagnosis between the two.—(*Idem.*)

Editorial.

The Medical Society of Virginia

Held its forty-second annual meeting in the Jefferson Hotel, Richmond, October 24-27, 1911, with a registered attendance of 394 doctors. The first night's session was opened with prayer by Rev. J. N. Latham, D. D. This was followed with an Address of Welcome by Judge John H. Ingram, to whom response was made by Dr. Rawley W. Martin, of Lynchburg. The President then delivered his Annual Address, which appeared in full in the last number of the *Semi-Monthly* which was issued about the close of the meeting. The remainder of the first evening was taken up with the usual reports of officers and committees, all of which were referred to the Executive Council for commendation.

Probably of most importance to the Society were reports of the Treasurer, who stated that

expenditures for the year were considerably in excess of receipts and that about 350 members were delinquent in the payment of dues for three years or more—this state of affairs, according to the by-laws, automatically working forfeiture of membership; while, as an offset, the Chairman of the Membership Committee reported only 51 new members. In view of this situation, the Society, upon recommendation of the Council, decided not to publish a list of delinquents this year, in order that the Treasurer, who has served for but part of a term, might have the opportunity to urge upon members the necessity of remitting at least part of their dues at this time, even if unable to send the full amount.

The Symposium on Typhoid Fever will be found in this issue of the *Semi-Monthly*, as also the paper on "Our Neglected Drunkards—What Virginia Should Do for Them." This latter article, because of its general interest, was recommended by the Society for wide publication, and resulted in a resolution by which a committee was appointed to urge the next Legislature to establish a farm for the treatment and reclamation of confirmed inebriates. Quite a number of other important papers were likewise read, including those by Invited Guests, Drs. Thomas B. Holloway, Philadelphia; J. C. Bloodgood, Baltimore, and Fenton B. Turck, Chicago, and Fraternal Delegate, Dr. Percy Brown, Boston.

A resolution regarding the feeble-minded, offered by Dr. Wm. F. Drewry, looking to the establishment of an institution where they may be segregated, cared for, studied and treated, and requesting the Society to appoint a special committee of five members to inform the Legislature of the views of the Society, and to cooperate with other organizations in their efforts to establish an institution for the feeble-minded, was adopted, and Drs. W. F. Drewry, E. G. Williams, J. S. DeJarnette, A. S. Priddy and P. A. Irving were appointed to serve on the committee.

The request of the Newport News Medical Society that the Medical Society of Virginia endorse a bill which it is proposed to introduce at the next Legislature, entitled "An Act to Provide for the Establishment and Maintenance in the Cities and Counties of the State of a System of Medical Inspection of School Children, etc.," was approved, and the Secretary was

instructed to notify the Superintendent of Schools at Newport News.

A communication from the Board of Visitors of the Virginia State School for Colored Deaf and Blind Children, requesting endorsement of a movement to enact laws looking to the prevention of blindness, etc., was received, and the Secretary was instructed to assure the Board that the Society would endorse all Legislative measures relating to a betterment of public health.

Two hundred dollars, or such part as may be needed, was appropriated to defray expenses of the Legislative Committee.

The movement to erect a monument in Richmond to the late Surgeon-General Samuel Preston Moore, of the Confederate States Army, was approved, as was likewise a resolution of Dr. W. B. Barham, looking to the establishment at the University of Virginia of a memorial to the late Dr. Walter Reed.

Article IV, Section 1, of the Constitution, was amended as follows: "In line 7, insert after the comma following Virginia, 'or any reputable regular white physician not holding the degree of Doctor of Medicine, but in good standing with his or her local or district medical society, and holding a certificate issued to him or her by the Medical Examining Board of Virginia.'"

Article V, Section 1, of the By-Laws, was amended to read: "Every member, except those hereinafter exempted, shall pay into the treasury the sum of \$2 for annual dues, which amount becomes due and payable at each annual meeting of this Society."

Section 2: "Honorary members, ex-Confederate soldiers and sailors are exempt from payment of annual dues. Members will be exempted from payment of annual dues on his or her request under any one of the following conditions: (a) When 62 years of age or over; (b) for physical or mental disability so long as it incapacitates him for active practice, such condition to be verified by the Secretary and Treasurer of the Society."

On occasion of called meetings of the Executive Council, the railroad fare of Councillors in attendance will be paid by the Treasurer of the Society.

The plan to re-district the State, as passed last year at Norfolk, into fifteen Councillor Districts is rescinded, leaving the Districts as heretofore.

Resolutions requesting the local profession

at future places of Society meetings not to entertain were promptly voted down.

The election of officers for the ensuing year resulted as follows: *President*, Dr. Hugh M. Taylor, Richmond; *Vice-Presidents*, Drs. Samuel Lile, Lynchburg, Jos. Grice, Portsmouth, and S. B. Moore, Alexandria; *Secretary*, Dr. P. A. Irving, Farmville; *Treasurer*, Dr. Greer Baughman, Richmond. Dr. C. R. Grandy, Norfolk, succeeds Dr. Hugh M. Taylor as a member and Chairman of the Judiciary Committee; Dr. Aaron Jeffrey, Newport News, takes the place of Dr. W. W. Chaffin on the Membership Committee; Dr. McGuire Newton, Richmond, succeeds Dr. J. H. Ayres on the Legislative Committee; the Necrological Committee remains unchanged; Delegates elected to the American Medical Association are Drs. John Staige Davis and W. E. Anderson, with Drs. H. D. Howe and L. G. Pedigo as alternates. Dr. W. W. Chaffin, Pulaski, was nominated to the Governor as a member of the Medical Examining Board of Virginia. The Committee on Publication of Transactions remains unchanged. Honorary membership was conferred on the retiring president, Dr. O. C. Wright, of Jarratt.

The next place of meeting will be Norfolk, the exact date to be determined later.

The subject for general discussion will be *Gastric and Duodenal Ulcer*, subdivided as follows: Clinical Manifestations and Diagnosis, by Dr. J. Staige Davis, University of Virginia; Medical Treatment, by Dr. J. G. Nelson, Richmond; Surgical Treatment, Dr. Lomax Gwathmey, Norfolk.

Drs. Clarence Porter Jones, H. U. Stephenson, and P. E. Tucker, were elected Councilors from the first, third, and tenth districts, respectively, while Drs. A. L. Gray and C. V. Carrington were elected from the State-at-Large. The other Councilors hold over. Dr. J. S. Irvin, Danville, was elected Chairman of the re-organized Council, and Dr. Gray, of Richmond, was made Clerk.

During the meeting of the Society, handsome receptions were tendered the members by Dr. Stuart McGuire at his residence, and by the local profession at the Commonwealth Club. The Valentine Meat Juice Company took the doctors in automobiles for a visit to their abattoir on the suburbs of the city, while the Trustees of the Valentine Museum a little later

gave an elegant luncheon to the visiting members and the ladies accompanying them.

Near the close of the meeting, the following resolution, offered by Dr. C. M. Hazen, Richmond, was moved, seconded and adopted under suspension of the rules:

Resolved, That in order that in some feeble measure the great debt may be discharged which this Society owes to Dr. Landon B. Edwards, the Medical Society of Virginia appoint a commission to consider the establishment of a permanent memorial, this memorial to be provided by a fund to be known as the "Landon Edwards' Fund," which shall be collected from various sources and which, when it shall have reached suitable proportions, shall be applied in some way to the purpose of some great public benefit.

This commission shall consist of nine (9) members appointed by the President from various sections of the State.

(Signed) C. M. HAZEN,
W. F. DREWRY,
A. S. PRIDDY.

State Conference of Charities and Correction of Virginia

Will hold its annual meeting at Roanoke, November 26-28, 1911. The sessions on Sunday will be conducted by negroes, and will be devoted to work among their race. The meetings on Monday and Tuesday will be held at the Y. M. C. A., and will be addressed by a number of prominent speakers from this State and elsewhere.

The work and talks of the Conference are all along lines that deal with the feeble-minded, prisoners, drunkards, dependent and delinquent children, and, while past meetings have been fruitful of much good, much still remains to be accomplished.

Among the subjects now under consideration by the Conference is the need of a marriage law in Virginia requiring a clean bill of health and evidence of a normal mind before license is issued. If the statement recently made that "one-fourth of all criminals are imbeciles" be true, the passage of such marriage law would result in a monetary saving to the State, and the prevention of a needless drain on our sympathies, provided the offspring of such unions partake of the characteristics of their parents.

Our reference to the above is due to the fact that we, as physicians, are in a position to lend material assistance to the Conference by

helping them "separate the wheat from the chaff" and we should not wish to be behind other States in advancing whatever tends to the up-lift of the human race.

The American Association for Study and Prevention of Infant Mortality.

Will hold its second annual meeting at Hotel La Salle, Chicago, November 16-18, 1911, under the presidency of Prof. Chas. R. Henderson, of Chicago. It is the purpose of the Association to hold two popular meetings in the evenings, with a view of arousing public interest and securing a wider recommendation for the important matters to be discussed. Dr. F. S. Churchill is secretary and also chairman of the local committee of arrangements. Executive offices are at 1211 Cathedral Street, Baltimore.

The Augusta County (Va.) Medical Association

Will hold its fall meeting in Staunton, November 15th, instead of November 1st, as announced in our last issue. Clinics will be held from 9 A. M. until 12 M. The meeting will be called to order promptly at 12 M., as at 12:30, the members and guests will leave by automobiles or other conveyance to be the guests of Dr. Herman Welland at his home near Middlebrook.

Papers will be read by Drs. Welland, F. H. Crawford, J. L. Sheppe, and Tom A. Williams.

The Northern Neck (Va.) Medical Association

Held its semi-annual meeting at Lancaster, November 2, 1911. A banquet at Thomas's Hotel followed the scientific meeting. Drs. B. A. Middleton, of Emmerton, and R. O. Lyell, of Warsaw, are president and secretary, respectively.

Mississippi Valley Medical Association.

Officers of this Association, elected at its last meeting in Nashville, Tenn., for the ensuing year are: President, Dr. Louis Frank, Louisville; vice-presidents, Drs. Albert E. Sterne, Indianapolis, F. W. Werner, Joliet, Ill.; secretary, Dr. Henry Enos Tuley, Louisville (re-elected); and treasurer, Dr. Samuel C. Stanton, Chicago. The next meeting will be in Chicago, in the fall of 1912.

Army Medical Corps Examinations.

The Surgeon General of the Army announces that preliminary examinations for the appointment of first lieutenants in the Army Medical Corps will be held January 15, 1912, at points to be hereafter designated.

Full information concerning these examinations can be procured upon application to the "Surgeon General, U. S. Army, Washington, D. C." The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between 22 and 30 years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training as an interne, after graduation. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible.

The examination in subjects of general education (mathematics, geography, history, general literature and Latin) may be omitted in the case of applicants holding diplomas from reputable literary or scientific colleges, normal schools or high schools, or graduates of medical schools which require an entrance examination satisfactory to the faculty of the Army Medical School.

In order to perfect all necessary arrangements for the examination, applications must be complete and in possession of the Adjutant General at least three weeks before the date of examination. Early attention is therefore enjoined upon all intending applicants. There are at present sixty-four vacancies in the Medical Corps of the Army.

Changes in Medical Corps, United States Navy.

Among recent changes noted in the Medical Corps of the United States Navy, Surgeon H. M. Tolfree and Passed Assistant Surgeon M. A. Stuart have been ordered to duty at the Naval Hospital, Norfolk, Va.

Passed Assistant Surgeon B. F. Jenness, formerly of the Naval Hospital at Norfolk, has been ordered to the navy recruiting station, Atlanta, Ga.

Doctors Convalescing.

Drs. Junius F. Lynch, of Norfolk, Va., and Lucius Lofton, of Emporia, Va., who have been quite sick in hospitals in Richmond, are both reported as being much improved.

Dr. M. D. Hoge, Jr.,

Richmond, Va., has just returned from a

pleasant trip spent in visiting some of the large Western cities.

Dr. E. T. Brady,

Who, it was recently announced, had located in Roanoke, Va., will limit his work exclusively to X-Ray and Diseases of the Skin.

Dr. B. C. Keister,

Of Roanoke, Va., leaves about November 10th for an extended absence from the State. The first three months will be spent at Post-Graduate Schools and Hospitals in New York and Chicago.

Wanted—An assistant in mining practice. Must be in good health and a recent graduate. Single man preferred. Salary, \$800 per year, which with extras will amount to about \$100 per month. Good experience in surgery and general practice for a young man, with chance for promotion. Medicines furnished. References required. Address O. N. T., care *Virginia Medical Semi-Monthly*.

For Sale—\$2,500 practice in valley. Thickly settled. Collections good. New up-to-date buildings. In good fruit section. Expect to specialize. Address J. L. A., care *Virginia Medical Semi-Monthly*.

Obituary Record.

Dr. John A. Hillsman,

Who for the past twenty years has been one of Richmond's most prominent physicians, died at his home in this city, November 5th, after a lingering illness. He was born in Amelia County, Va., June 18, 1834, and after the usual preliminary education, studied medicine at Jefferson Medical College, Philadelphia, from which institution he graduated in 1859. Dr. Hillsman served as Assistant Surgeon of the Forty-fourth Virginia Regiment during the War Between the States and for a long time has been Surgeon to Pickett Camp, United Confederate Veterans. He was a member of Dove Lodge A. F. & A. M. and was an honorary member of the Medical Society of Virginia and of the Richmond Academy of Medicine and Surgery. Dr. Hillsman was a gentleman of the "Old School" and will be greatly missed by a large clientele as well as by his confreres in the medical fraternity.

He is survived by five children—Dr. B. A. Hillsman, A. M. Hillsman and Mrs. U. O. Michaels, of Richmond; Mrs. R. B. Whitlock and Mrs. W. B. Porter, of Tobaccoville; Va.

Dr. John F. Bransford

Died at his home, "Stony Point," Chesterfield County, Va., November 4, 1911. After the War Between the States, in which he took part and surrendered with the Richmond Howitzers at Appomattox, he studied medicine and graduated at the Medical College of Virginia in 1867, and was afterwards made surgeon in the United States Navy. He went around the world on the old *Richmond*, and was on that ship when former President Grant visited China.

After doing special service connected with the Smithsonian Institution, Washington, D. C., in Nicaragua and Central America, Dr. Bransford resigned and married Miss Lizzie Baker, of Augusta, Ga., who survives him. He re-enlisted during the Spanish-American War and was Surgeon with Captain Wainright on the *Gloucester*. At the recent meeting of the Medical Society of Virginia, held in this city, a resolution was passed, extending sympathy to himself and wife on account of his continued illness.

Dr. Alexander Hugh Ferguson

Died at his home in Chicago, October 20th, from septicemia. He was born in Canada nearly 59 years ago, and studied and practiced his profession there until 1894, at which time he moved to Chicago. He was prominent as a surgeon and educator in several medical colleges, and was a member of many of the leading medical societies of the States and Canada.

Dr. Forest A. Williams,

A prominent physician of Avon, Nelson Co., Virginia, died at his home, October 29, 1911. He was born in Nelson county, March 12, 1867, and received his academic education at Fishburne Military School and Locust Dale Academy. He studied medicine at the Medical College of Virginia, graduating in 1892, after which he served as interne at the City Almshouse, Richmond. Upon the completion of his term of service at this hospital, he took up the practice of his profession in his native county, where he has since made his home.

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EXPERIMENTAL INVESTIGATIONS AND PATHOLOGICAL RESEARCHES — THE CAUSE OF CANCER; ITS INTRA-CELLULAR PATHOLOGY, PRODUCED BY A NITROGEN- IZED-AUTO-INTOXICATED LYMPH — CANCER CAN BE PRODUCED ARTI- FICIALLY.*

By FREDERICK GAERTNER, A. M., M. D., LL. D.,
Pittsburgh, Pa.

Microscopist and Pathologist Extraordinary.

Is Cancer a Curse to Mankind?

Scientifically speaking, "No; because some animals are prone to cancerous growths (Gaertner, 1905), and it can be produced artificially (Gaertner, 1911)."

In the spring of 1900, in a lecture before the Academy of Science and Art, I made the following introductory remarks, concerning the relative increase of cancer, the most dangerous scourge the human being has become heir to:

"Cancer is a prolific retrogressive disease, a pathological condition, in which the original mother-cell takes on an 'acute-progressive-embryonic development,' superinduced by the omnipresence and omnipotence of an unseen cancer element, and that its severity, intensity and prevalency, has increased in exact proportion as the wave of Christianity has advanced towards civilization, and particularly since man's physical, moral and psychological standing has dropped and deteriorated from a progressive physiological and psychological advancement and harmony to a retrogressive discord and degeneracy." (Gaertner, 1900, in *High Tyde*.)

I will now modify the above and add the following:

"That the human being has brought this terrible condition upon himself; it is neither hereditary nor contagious, somewhat infectious as it can be inoculated by transplanting neo-

plastic-cells; recently it was even transmitted by vaccinating a filtrate free of the tumor cells, and still more recently, **I have produced cancer artificially.** This would be absolute conclusive proof that the causative element is due to a chemical toxic excitant, and not to a germ."

When we speak of cancer, we necessarily mean a malignant growth. The cancer problem concisely stated by the best authorities of to-day is as follows:

Bashford says: "What is understood by the malignancy of a tumor is but a manifestation of the power of growth; a condition to which Apolant and Ehrlich have recently given confirmation." Adami says: "As the consequence of the primary stimulus there develops a colony of cells, all tending to proliferate. Thus is acquired the 'habit of growth,' the **factor common to all tumors.**"

Besides the above scientific views, I have recently demonstrated by vivisectional tests (on animals) that cancer is purely a lymphatic disease, primarily nourished and incited by an intoxicated lymph; and secondarily absorbed, carried and traveled by the lymph-channels to produce early lymphatic regional, primary infiltrations. The incipency of neoplastic proliferations is characterized by an acute irregular multiplication of embryonic nature, in which the original mother cell was incited or over-stimulated into an extraordinary development with a changed physiological condition from a functioning secreting epithelium to a non-secreting (excreting) endogenous supra-numerical reproduction; there could not be a degeneration of the epithelial cells because in that event there would be no proliferation; this fact speaks against a previous constitutional dyscrasia which some pathologists hold exists prior to this irritating or inciting cause. Again, if it was due to a prior constitutional dyscrasia, then a different type of cancerous growths would develop in different parts of the body at one and the same time.

*Read before the American Association of Clinical Research, at Boston, Mass., September 28, 1911.

Carcinoma has four distinct stages:

First. The stagnation and decomposition of lymph, with a nitrogenous auto-intoxication of the epithelium; its intra-cellular constituents a direct exciting stimulus to the nucleus.

Second. An acute irregular cell proliferation into cancer colonies, thereby tumor formation with a tendency of encapsulation and early lymphatic regional infiltrations.

Third. A breaking down of the over-stimulated and over-distended toxic nitrogenized epithelium due to mal-nutrition and degenerative changes, fermentation of the stagnated lymph and tissue juices, the formation of cancer fluid; extensive stasis, ulceration, necrosis into blood vessels and secondary metastasis.

Fourth. Death—from cancer, toxæmia and exhaustion.

In studying the real causative principle of cell proliferation, we must come back to Virchow's original theory, "*Omnis cellula e cellula*," 1855.

That the movable cells of the body, such as the blood-corpuscles, wandering interstitial cells, lymphoid and round cells, all are indirectly implicated in the production of cancer, whilst the fixed tissue cells—*i. e.*, endothelium, epithelium and epithelial cells are directly concerned. All have a three-fold functional duty to perform; in fact, they are the offensive and defensive tissue elements of the human organism. Along their line of duty they have inherited a second habit, that is, of taking up (for phagocytization) minute particles, substances and tissue debris, both of inorganic and organic materials, especially micro-organisms, their toxins, end bodies, even immune elements; this has been demonstrated to a certainty through vivi-sectional experimentations on animals by me; they also take up chemical elements, nucleins and proteins held in solution, others in more suspension of the body fluids and juices. These substances are taken up—some to maintain normal functional activity of the cells, others for the purpose of storing away elements for future uses, and still others to stimulate normal reconstruction—*i. e.*, proliferation; and, finally, toxic-nitrogenized fermented lymph-juices, which, when taken up (re-absorbed), by the cellular epithelium, produce an over-stimulation, with a decided irritating effect to the protoplasm, its enzyme and especially to the nucleus and nucleolus; "right here we get the starting point of cancer." In-

asmuch as the nucleus and especially the nucleolus controls the cell in the matter of reproducing itself, as well as functioning the tendency to reproduction, however, with a pathological proliferation drifting into malignancy, we find the presence of an abnormal stimulus, that of a toxinized fermented nitrogenous lymph. That the epithelial cell *in loco* possesses an inherent property to reproduce itself stimulated by the oxidized blood current, and, therefore, a physiological action, but as soon as the lymph has to supply that nourishing element, it produces an auto-intoxication, especially where the lymph has been checked or interfered with by an altered physiological condition. It at once undergoes chemical changes, and gaseous fermentation, thereby becomes abnormal—*i. e.*, a nitrogenized chemical incitant; especially in such cases where the tissues have been traumatized by a continuous mild injury, a blow or other injuries; then of long continued chronic inflammations—*i. e.*, disturbances in the blood pressure, concomitant with grief and worry, then the abusive use of alcoholic drinks and venery; these are most important contributing factors in reducing the resisting powers of the human organism, whereas in other chemical changes produced by interferences with metabolic changes of the body in excessive meat eaters and alcoholism, then uric acid diathesis; diabetes, even chronic nephritis, these furnish exciting stimuli for increased cell proliferation.

This process of epithelial cell proliferation can be estimated by the amount of metamorphosed intra-cellular changes which may have been provoked, either by chemical, mechanical or gaseous metabolism; normally its intra-cellular digestion goes on from membrane to nucleus. The cells as a whole are complex machines and not chemical entities; each has a three-fold functionating duty to perform. I will not go into details here of their progressive cellular metabolism, as we are most concerned with the by-products or the remains of intra-cellular digestion—*i. e.*, its effete matter commonly called lymph. First, physiologically the cells continue to multiply as long as the proper oxidized nourishment is furnished them and the lymph produced carried off into the circulation. The cells, therefore, are simply obeying the laws of nature to proliferate into typical cell reproduction. Secondly: A supra-normal proliferation, in which the proliferation goes on,

but only in pairs, and being a regular typical type of the original mother cell, in such cases as adenoma, papilloma and ordinary warts. Third: We finally have an ultra—*i. e.*, an acute progressive, irregular proliferation with distinct intra-cellular pathological changes. Of which this thesis treats:

Cancer, Carcinoma and Epithelioma, even Endothelioma—Cancer Can Be Artificially Produced.

Its intra-cellular pathology, I have recently demonstrated on quite a number of animals by injecting a solution of toxic-nitrogenized fermented lymph into the epithelial layers of the mammary gland of a bitch, and especially rats and mice; the identical same results I obtained by injecting a filtrate made from a cancer fluid minus its neoplastic cellular elements. In each and every instance I found that the cellular epithelium became enlarged, pale and finely granular, the nuclei were scattered, but mostly subdivided, whilst the cellular elements were in a process of crenation and segmentation, some in mitotic developments. Other cellular elements rapidly became neoplastic in character, many of them over-dilated from irregular gaseous vacuoles and thereby formed into an irregular atypical cell proliferation, cancer colonies; besides a fibrilla network of coagulated lymph, in its meshes were lymph cells. In further advanced growths, I found that the epithelial cell which normally has its function to secrete was so changed and modified by its rapid proliferation, together with the production of an apparent virulent toxin element, that it infected other cells in their immediate neighborhood, in consequence an extraordinary irregular cell proliferation into cancer nests; spreading, growing and penetrating into the surrounding tissues which offer least resistance, especially along the lymph spaces which became dilated by this stagnated gaseous lymph. We oftentimes hear physicians remark that cancer has roots; roots are right; it shows the enormity in growth and malignancy in its penetrating power of destructiveness; it also explains the macroscopic-pathological fact, by extracting a cancerous growth (with a "zinc drawing salve"); its entirety with its radical appendix comes away, and for that reason it is called in German, Krebs.

The larger the colony of proliferating cells becomes, the more difficult it will be to encap-

sulate it and convert it into a quiescent nodule. If this cell proliferation is set up in an individual in whom the defensive reaction is impaired or deficient on account of lack of plastic or cicatricial tissue substance, the larger and more rapid the cancer colonies grow; the force of infiltration and penetration is measured by the intrinsic tissue resistance and its type of malignancy. Herein lies the explanation of the well-known fact that the growth of cancer in the young is more rapid than in the old, for the simple reason that the tissue resistance in the young is at its minimum and especially the plastic and cicatricial tissue elements are used up in other directions. However, the appearance of cancer in the young is decidedly a rare occurrence.

Bashford says: "The influence of age is active in relation to the origin of cancer, but not in relation to its continuation; for cancer can be propagated almost better in young than in old animals." Speaking of transmitted cancer, he says: "The tissues of the new hosts do not acquire any cancerous properties; they merely re-act to the cancer cells and supply them with nourishment."

The animal body has learned to protect itself against the growing colony of cells by encapsulating it and converting it into a harmless nodule, harmless for the time as contrasted with an infiltrating malignant growth, which it would otherwise become without such encapsulation. This also speaks against the germ theory from the fact that, by transplanting cancer cells or colonies of cancerous growths onto an animal, it produces the same prototype of cancer as the original growth; thus the same corresponding type of cellular (neoplastic) elements are found in secondary metastasis as that of the original tumor—*i. e.*, of epithelioma, the metastatic growths are epithelioid in character, whereas cylindrical cell cancer produces cylindrical cell metastasis, a round cell that of a round cell metastatic carcinoma, and of an endothelioma a distinct—*i. e.*, an exquisite endothelial cell metastatic nodule. The fact that neoplastic metastatic depositions have their starting point within the capillary blood vessels, and being of the same prototype as the original tumor and decidedly limited in its growth from a mere speck to a larger nodule, shows conclusively that these neoplastic metastatic cellular elements carried with them enough nitrogenized auto-intoxicated lymph to produce

within themselves a local (metastatic) proliferation of the same type of neoplastic epithelium as that of the original growth, and that it does not effect the cellular epithelium of the new organ, only atrophy by pressure. This is absolute proof that cancer is not caused by a parasite, not even a prior constitutional dyscrasia. If it was, it would then necessarily produce a different variety of cancer in each of the different organs of the human organism at one and the same time.

This further strengthens my convictions, and by the additional facts that metastatic deposits (which are derived from the fixed body-cells—*i. e.*, the infiltrated and toxinized endothelial, epithelial and round cells, even the interstitial tissue cells), are transported by the blood stream and deposited within the capillary blood vessels of the new organs; therefore, early lymphatic infiltrations should not be classed as metastatic, for the simple reason that they are not produced from the fixed cells, but by the absorption of nitrogenized intoxicated lymph which carries with it the infiltrated and intoxicated movable cells; consequently, early regional lymphatic infiltrations are always lymphoid in character, whereas the metastatic proliferated cells are always identical with the original epithelial growth. This shows that the primary predisposing stimulus or inciting cause in stirring up an acute irregular neoplastic proliferation was due to two causes: First. That the cellular epithelium has been weakened by excessive functional activity or traumatism, with impaired nutriment. Second. That its intracellular constituents were over-stimulated by a toxic-nitrogenized—*i. e.*, an auto-intoxicated lymph: therefore, the incipient process of any cancer is extremely local and originally limited to a few cells. Councilman says: "The characteristic of cancerous growths is that they are capable of attracting to themselves a supply of nourishment at the expense of the surrounding tissue." This is exactly of what I speak—*e. g.*, this auto-intoxicated-nitrogenized lymph and lymph elements which should have been carried off to the next nearest lymph glands and used up by the lymphoid, wandering interstitial cells and newly born leucocytes, especially by chemical solvents, "autolysis," are reabsorbed by the cellular epithelium. This explains the fact that we oftentimes find primary lymph adenocarcinoma as a secondary regional infiltration, whilst the primary cancer was either destroyed

by encapsulation or calcification, cicatricial tissue indurations or evacuated by suppuration. Many of these instances are found by diligent microscopic searches.

Clinical and pathological examination demonstrate that organs undergoing atrophy from cessation of function, as the mammary gland and the uterus, during and after menopause, autopsies, show increased stagnated lymph deposits and therefore a relative increase of cancerous growths at this age. Then, again, when slight pressure serves to stop the slow lymph current, it is this pressure that causes stagnation, eventually an auto-intoxication of the cellular epithelium, and this explains the predisposing effect of gall-stones to cancer, or the pipe in epithelioma of the lower lip; likewise the cud in the mouth of the betel nut chewer. Finally, the extreme frequency of *pyloric stomach cancers* is due to the fact that this part of our anatomy is the one most exposed: First, to external violence—*i. e.*, traumatism; and, secondly, to the irritating and chemical action or reaction of the food materials, organic and inorganic particles that pass along the gastro-intestinal tract; then its close proximity to other vital abdominal organs—*i. e.*, the liver, gall-bladder, duodenum, ductus-choledochus, pancreas and blood vessels. Especially the lymph system is here highly developed and easily interfered with, either through pressure or impaired circulation. "It is therefore doubly exposed."

In studying the physiological chemistry of the normal tissue juices, and especially the elementary processes leading up to this, the principal chemical agents responsible for the decomposition of the food material into substances fit for cell appropriation and oxidation are ferments, acids, alkalies and water. However, the subject on nuclein and protein metabolism is the one most important for our consideration, because of the relationship of nuclein to uric acid. Endogenous uric acid is derived from the metabolism of the organ cells, exogenous uric acid from the nucleins and purin bases of the diet. Uric acid has been oxidized to urea by alkaline solutions of hydrogen peroxide and has been decomposed by radium emanations into ammonia and carbonic acid.

Nuclein occurs in the nuclei of the cells as nucleo-proteins which consist of nucleinic acid and two albumin components, one of which splits up readily, the other with difficulty.

Nucleinic acid is a tetrametaphosphoric acid, in which each phosphorus atom is associated with a carbohydrate (hexose). When nucleo-proteins of the diet reach the stomach they are split into albumins and nucleins. The latter is now attacked by trypsin and decomposed into nucleinic acid and cleavage products, with a change of nature from the colloid to the dialysable, soluble and absorbable state. Behind the intestinal epithelia the nucleinic acid is attacked by powerful ferments which have the power to change it into uric acid. Compare the composition of uric acid $C_5H_4N_4O_3$ or $CO(NH)_2$. CO , C_2 , $CO(NH)_2$, and note the large percentage of nitrogen, four parts; most of it must go to rebuild the nucleo-proteins of the organ cells; and for that reason the nucleo-proteids should be avoided in cancerous subjects, especially where conditions favor an overproduction and an accumulation of a nitrogenous lymph. We, therefore, cannot lay too much stress upon the proper and improper metabolism of nucleo-proteids; these furnish phosphorus and nitrogen elements that help to build up the protoplasm and nucleus of the epithelium. If these elements are diminished the epithelium either suffers degenerative changes, or only a decline and atrophy; however, if increased, it produces an increased functional activity of the cellular epithelium, or the then weakened inactive epithelium may be crowded by an overaccumulation with hypertrophy; this in itself produces an abnormal amount of lymph. When this becomes stagnated, toxinized through traumatized tissue impairments, it produces a fermentative nitrogenous lymph; if this process is kept up, how easily it can set up an auto-intoxication with a reinfiltration of the cellular epithelium of its own effete and decomposed product, that of a fermentated toxic-nitrogenized lymph. This, together with the breaking down of neoplastic cellular constituents into the capillaries, explains the decided increase of colloidal nitrogen in the urine of cancerous subjects; also the relative increase of a gaseous alkaline fluid in the stomach of cancer of the stomach which is due to interstitial fermentative changes of the cancer fluid and the breaking down of neoplastic nitrogenous elements, thereby setting free a gaseous alkaline lymph liquid, neutralizing the acid and acid bearing elements in the stomach. This could only occur in its second, especially third stages of cancer of the stomach, and explains the finding of pepsin in the urine.

Many authorities still claim that the direct and relative increase of cancer is due only to traumatism, and cite the following conceded facts: that the frequency of cancer of the uterus and of the female breast, of the lip in pipe smokers, of the scrotum in chimney sweeps, of the bridge of the nose from eyeglasses, of the young female breast from ill-fitting corsets, even the hand of X-ray workers, can all be attributed to a local injury—*i. e.*, trauma. It is a conceded chirurgio-clinical fact that a continuous mild injury, or slightly traumatized tissue, exposes the same to chronic irritation and inflammatory changes with round cell and leucocyte infiltrations. This alone does not produce cancer; but it furnishes the predisposing factor in tying up the lymph. If this process retrogresses into cicatricial tissue indurations followed by degenerative changes, cancer could never develop; however, if these local continuous, mild irritations advance into a chronic congestion, it would necessarily furnish an impaired oxidized nutriment to the cellular constituents—*e. g.*, intrinsic proximal pressure its lymph return becomes stagnated, fermentative changes are inevitable with the production of a nitrogenized auto-intoxicated lymph; this process may, however, progress or retrogress. If it progresses, the then impaired circulation, together with the stagnated lymph and tissue juices, also the infiltrated round cells, leucocytes, even red blood disks, becomes reabsorbed into the blood circulation and its toxic elements eliminated by the liver and kidneys. However, if it retrogresses, it may either cicatrize and become encapsulated, or calcification may even set in; but if this process is less favorable; that is, if the plastic and cicatricial tissue elements are physically impaired, it may go into suppuration and be evacuated by nature or by the surgeon's knife. If still less favorable, the then stagnated lymph will undergo further fermentative changes and become a nitrogenous auto-intoxicated lymph which acts as a toxic irritant, a direct incitant—*i. e.*, an intra-cellular stimulus, and therefrom an irregular, atypical cell proliferation results. I further claim that the degree of malignancy can be estimated by the qualitative and quantitative percentage of intrinsic toxic-nitrogenized lymph and lymph elements produced; and to the extent they have infiltrated, irritated and toxinized the epithelium.

Some writers even claim that the tubercle

bacilli is the cause of cancer. This theory can easily be discarded, for the following positive reasons: First. Acute pulmonary tuberculosis is a specific—*i. e.*, infectious, sero-lymph disease, whereas cancer a non-specific lymphatic disease. Second. The formation of pulmonary tuberculosis (miliary tubercles) is produced by a sero-lymph process with a semi-degenerated cell proliferation of the fixed epithelium lining the alveoli, together with a proliferation of the lymphoid cells into tubercles, the center of which degenerates and becomes caseous, then coalesces with other tubercles, resulting in a breaking down process, suppuration, cavity formation, with early bacteriæmia, whereas in cancer, we have none of the above specific pathological conditions, but a distinct typical epithelial cell proliferation into cancer colonies and tumor formation. Third. If the tubercle bacilli was the real cause of cancer, we would then find a large percentage of primary cancer of the lungs, which is absolutely not the case and decidedly a very rare occurrence. I have seen but one case in my thirty years of pathological work. Fourth. This is the most important convincing fact, a microscopic differential fact, a fact beyond dispute; that is, that the epithelial, endothelial and round cells, especially the leucocytes and interstitial wandering cells, all have an inherited duty to perform; to take up small elements, especially the bacilli, and to destroy them by phagocytization. However, if these infiltrated fixed epithelial cells lining the alveoli become over-burdened with the bacilli, or other organic and inorganic dust particles, they at once degenerate and separate (therefore could not proliferate into a cancerous growth); some are thrown off by expectoration, others become absorbed by the "stomata" (Gaertner, 1883,) and carried to the next nearest lymph glands and deposited, where they frequently set up a tubercular lymph-adenitis with caseation, but never a cancerous growth. It has been my good fortune to have demonstrated recently by scientific vivisectional experimentations that the tubercular infiltrated and for the most part degenerated epithelial, endothelial, lymphoid and round cells, also the leucocytes, wandering interstitial cells, even pus-corpuscles, are the common carriers of the tubercle bacilli—carried by the blood stream and deposited within the interstitial tissue capillaries, thereby producing

metastatic or interstitial tuberculosis, *but never cancer.*

I have recently suggested to my scientific colleagues and clinicians to inject a concentrated solution of live tubercle bacilli into cancerous growths. The object in view was to induce a degenerative process of a caseous nature among the fast proliferating neoplastic cells, thereby contraction with a possible cure.

Cancer research societies, especially The German Central Committee for the Investigation and Suppression of Cancer at Berlin, and other reliable investigators and experimenters, have brought forward practical interpretations of the finding of new scientific facts, as follows:

I. "Chronic irritations or oft repeated small traumatism play a definite rôle as a predisposing influence in the localization of malignant disease in the human organism."—Wm. B. Coley, *Annals of Surgery*, April and May, 1911.

II. "It is possible to transmit a tumor by means of a filtrate free of tumor cells."—Peyton Rous, *Jour. Exper. Med.*, April, 1911.

III. "It is conceivable that a chemical stimulant elaborated by the neoplastic cells, might cause the tumor in another host and bring about in consequence a further production of the same stimulant."—Peyton Rous, *Jour. Exper. Med.*, April, 1911.

IV. "Chorioepithelioma.—The natural history of this tumor shows remarkably how important is the reaction of the tissues of the 'host' to any tissue elements that have lost their subjugation to the general needs of the organism, or have abnormally continued functioning after the need of some special function is gone. In the case of chorioepithelioma, gestation is of course such a function."—Hitschmann and Cristofolletti, *Wien. Klin. Wochenschrift*, May 11 and 18, 1911.

V. "Cancer Immunity.—Figures and results show conclusively that spontaneous mouse cancer occurs in the female almost exclusively, but may be inoculated with equal facility in members of either sex. Spontaneous cancer occurs in elderly mice, but inoculation occurs most successfully in young animals. Cancer is much more readily inoculated among animals of the same species. Rats, for example, cannot be successfully inoculated with the most virulent mouse cancers. From the abortive growths which result in the rat, however, mice can be

successfully inoculated."—Apolani, *Deut. Med. Wochenschrift*, June 15, 1911.

VI. "The susceptibility or insusceptibility of inoculating different species of animals with the same cancer filtrate and the production of cancer in one specie and not the other is due to difference in metabolism."—Ehrlich.

VII. The experimental researches and observations made by Peyton Rous, Apolani, Bashford, Ehrlich, Adami, Coley, Hitschmann and Cristofolletti, are worthy of honorable mention.

VIII. "The inoculability of transmitted or transplanted cancers by neoplastic cells or a filtrate free of cancer cells, even by an injection of a nitrogenized auto-intoxicated lymph into rats and mice is favorably influenced by nucleo-protein metabolism and toxic lymph nutrition; unfavorably affected, however, by tissue resistance and lymphatic absorption. It is a demonstrable fact that early regional primary infiltrations, even secondary metastasis, are greatly augmented in their malignancy in localities where the lymph capillaries are highly developed, or over-distended with lymph that has undergone a nitrogenous decomposition."—Gaertner, *D. & S., Microcosm*, 1911.

IX. That the fast proliferating and over-distended neoplastic cellular constituents contain a large percentage of nitrogen I have already demonstrated; you can readily convince yourself by cutting a freshly excised cancerous growth, under water; observe the gas bubbles that come to the surface and that it contains colloidal and amino-nitrogen. I have recently observed under the microscope that with a primary—*i. e.*, a fast-proliferating cancer taken from a young subject, the proliferation would go on for three to five days after excision (or after death of the animal), providing, however, you take a section of the outlying districts where its malignancy is yet in its first or second stages. This demonstrates that the neoplastic fast proliferating epithelium carries an intrinsic (intra-cellular) incitant, or a direct irritating stimulus; it could not be a germ or parasite because in that event the epithelium and cellular constituents would at once degenerate—*i. e.*, atrophy or become caseous.

X. Cancer is a lymphatic disease, lymphoid and epithelioid in character, primarily caused by a fermented nitrogenized lymph, nourished by an auto-intoxicated lymph, and carried by a toxinized lymph stream; secondarily, absorption

of this is favored by lymph-hyperæmia; carried into the blood circulation of such toxinized lymph and lymph-elements to produce a constitutional lymphatic dyscrasia; eventually by necrosis *into blood vessels*, with absorption of the neoplastic cellular elements—*e. g.*, lymphatic cancerous cachexia; secondary, metastasis; cancer toxæmia, and death.

XI. The inoculability, transmissability or cross-inoculability of cancerous growths into animals of different species and the successful vaccination of one and not the other, even of the same specie, is hereby explained. In transplanting neoplastic cellular elements—*i. e.*, to get results, it is necessary to use portions of a cancerous growth taken from the outlying districts (periphery), or of the cellular epithelium which has not been exhausted by excessive proliferation and degeneration. Such cells are most likely to produce a transplanted proliferation in the new host; however, the so-called group-up-cancer-cells, or cells taken from the center of an old tumor, cannot be made to proliferate *de novo*, simply because each original mother cell has the pre-existing (inherited) intrinsic power to proliferate—"omnis cellula e cellula." Even when over-stimulated, they can only proliferate so much and no more.

It has been estimated by actual comparative microscopic observations that a cancer nest could be the product of proliferation from a single original mother cell. It may be possible, however, to stir up a primary (incipient) proliferation in the new host, providing the old exhausted and degenerated cancer cells carried enough intrinsic toxic-nitrogenized lymph and that the neoplastic cellular elements were sufficiently crushed to allow its toxinized lymph to ooze out and inoculate the new adenoid and epithelial tissues in the young animal.

5012 Liberty Avenue.

REMARKS ON TYPHOID FEVER.*

By R. L. RAIFORD, M. D., Sedley, Va.

After a careful study of the methods used and the results obtained in the treatment of over two hundred cases of typhoid fever, in personal practice and consultation, the writer is thoroughly convinced that there are few absolute essentials in the management of an ordinary case. For those misguided mortals who conscientiously advocate certain specifics, from the

*Read before the forty-second annual meeting of the Medical Society of Virginia, at Richmond, October 24-27, 1911.

internal administration of acetozone solution to the deep injections of mercury, for the purpose of aborting, interrupting or shortening an attack, I have a great deal of sympathetic respect, yet the bare fact still remains that those patients who receive the least drug treatment most often do best.

Well do I remember the first case of typhoid fever which a more kind than exacting fate threw into my hands. After spending three years at hard grinding work in college, I, like most other students, began to feel like I knew "some medicine" and during my summer vacation I was called to see the case in question. I would study symptoms and go home and study my text-book. My patient having begun with a rather irregular type of fever, I could not make a diagnosis, and finally called in a neighboring physician, who, as it happened, believed in liberal medication. His diagnosis was that my patient was suffering from a kind of mongrel disease which he termed slow fever, and he advised four grains quinine, three grains acetanilid and five drops of Fowler's solution of arsenic every four hours, ten drops turpentine three times a day, and purgatives as needed. He also advised most rigid dietetic measures.

This gunshot prescription was explained to my perfect satisfaction as follows: In the first place slow fever was supposed to be a kind of go-between that partook partly of the natures of both typhoid and malaria. The quinine and arsenic were advised for their anti-periodic effect. Acetanilid was a good antipyretic and intestinal antiseptic. Turpentine would relieve the tympanitis, and purgatives were always in order as needed.

After this my patient gradually developed into a typical case of typhoid. Whatever information I had imbibed regarding this subject from my studies up to this time in college had completely vanished and I adhered unswervingly to the course of medication outlined above. When the patient complained of buzz-saw symptoms in her head or of nausea, and had weak and fainting spells from the effect of too much quinine and acetanilid, it was all explained as being for the good of the cause, and after six weeks of vigorous medication and starvation my patient was discharged as cured.

Encouraged by the success with which my efforts were crowned and knowing of no better method I adopted the above as a routine treat-

ment. During the summer I treated about twenty other cases of typhoid in the same manner with quite as good results.

Looking back now over that summer's work, I can but be deeply impressed with the generous way in which mother Nature, in the face of almost insurmountable obstacles, helps bring the efforts of her misguided children to a fruitful termination. Be this as it may, I am fully convinced that the average case will get well whether it is given little or much, or good or bad drug treatment, provided the rest and dietetic measures used are not too much at fault.

Not only to the inexperienced, as shown above, is a positive diagnosis of typhoid hard to make, but, especially in malarial districts, the oldest and best practitioners are often baffled. So often do the symptoms of these two diseases simulate each other that frequently several days of careful study with the help of laboratory methods are required to clear up the diagnosis; however, with the assistance the State Board now offers, there is usually little excuse for us to remain long in doubt as to how to proceed.

The usual method is to treat every case as malaria until we are sure that we are dealing with typhoid. This necessitates giving large and continued doses of quinine which, if we are dealing with malaria, is just the thing. On the other hand, if we are treating typhoid it is not only not necessary but, I believe, often positively injurious. Here we have a patient who is suffering from a disease which always greatly taxes the nervous system, and, if we add to this the nervous excitement due to large and continued doses of quinine, it is not hard to appreciate the untoward results that will obtain. In fact, I have so often seen ill effects result from the administration of large doses of this drug, intentionally or otherwise, in the treatment of typhoid fever, that I have sometimes thought it would be better if we were to reverse the present method and assume that every doubtful case is typhoid, and, until we can make a positive diagnosis, treat it accordingly.

In arriving at this positive diagnosis, the symptoms of these two diseases must, of course, be constantly borne in mind, and a blood specimen should be sent in for a Widal to be made, or to be examined for the plasmodium malariae.

As a matter of fact, most doctors practicing in the rural districts must needs spend so much time in getting from one patient to another

that there is no time for perfecting his microscopic technic to such a degree as to depend much on diagnostic help from that source. Also, on account of distance from the laboratory of an expert, he must wait several days for a Widal report.

Realizing the value of an early diagnosis in these cases I have for some time been making a diazo test in every suspicious case. The necessary apparatus and the technic is so simple that any physician can make this test at the bedside in a few minutes. All that is required is one bottle containing a 5 per cent. solution of hydrochloric acid saturated with sulphanilic acid; a second containing a $\frac{1}{2}$ per cent. solution of sodium nitrite; a third containing ammonium hydrate; a test tube, and an ordinary medicine dropper.

When it is desired to make the test, a small quantity of the solution in bottle number one is mixed in a test tube with that in bottle number two in proportion of 40 to 1. To this is added an equal quantity of the urine to be tested and the mixture well shaken. Now, with the medicine dropper, a small quantity of ammonia is taken up and allowed to flow gently down the side of the test tube so as to make a sharp line of contact. At the junction of the two fluids a dark garnet or cherry red ring will form if the reaction takes place. If the tube is well shaken, a uniform red color is imparted to the entire fluid, and the whole is covered with a characteristic red foam. If poured into a white basin containing much clear water a beautiful salmon color is obtained if only traces of the chromogen are present. Carried out in this manner, no question will arise as to the presence or absence of the reaction.

I have used this test in about one hundred cases where the symptoms were doubtful as to whether malaria or typhoid was causing the trouble. Of these about half developed into unquestioned typhoid as proven by symptoms and a positive Widal. Not one case that turned out to be malaria gave a positive diazo, and only three of the typhoid cases failed to give the reaction.

The above is a better showing as to the value of this test than most writers claim for it where it has been tried out with a more accurate technic than I was able to use. However, no less authority than Simon writes as follows:

"The value of Ehrlich's reaction in typhoid fever was at first over-estimated, but is at pres-

ent certainly under-estimated. I have personally studied this problem with great care, and after many years' experience maintain, as I did years ago, that the test is a most important diagnostic aid in the disease in question.

"As a general rule, the reaction is present as early as the fifth or sixth day, and may persist into the third week; it then disappears, but may reappear when a relapse occurs. Excepting in children, its absence from the fifth to the ninth day usually indicates a mild case. This rule, however, is not without exception, and I have seen a case of typhoid fever in which, notwithstanding exceedingly high temperatures, the reaction was not obtained until the beginning of the third week, and then persisted for only a few days. It may be present as early as the fourth day."

There are other diseases, such as measles, diphtheria, scarlet fever, pneumonia and tuberculosis, in which the reaction is more or less constant, but these are usually easy to differentiate from typhoid by symptoms alone.

Personally, this test has been of inestimable value in shaping the course of treatment in cases suspected of having typhoid fever. Being a disease of gradual onset, several days has usually elapsed before a physician is consulted. This usually allows ample time for the reaction to occur at the first visit.

Having settled the question of diagnosis and begun medication in an intelligent manner, I believe the next thing in importance is careful attention to the diet. There is no question in my mind that we have heretofore been pushing starvation measures too severely. In the average case I do not hesitate to give such diet as soft boiled eggs, strained oat meal, milk custard, gelatin, baked or stewed apples, etc., in small quantities throughout the attack, and as soon as the fever subsides the patient is ready for and can take a more liberal diet with perfect safety. The advantages of such a diet are, I believe, a less emaciated and more satisfied patient, and a shorter convalescence with less tendency to relapse.

Of course, there are patients to whom it would be the height of folly to allow such a diet, and here the skilled practitioner must be always prepared to decide which course it is best to pursue. The old method of allowing nothing but a liquid diet throughout the attack and waiting ten days after the fever subsides before allowing even so much as a soft boiled egg

has its place in certain cases, but let one of you try it once for yourself and learn by personal experience what the pangs of hunger really are and you will decide then and there to ever after allow in every case the most generous diet that safety will permit.

In conclusion, I would say that, like the obstetrician, the physician who assumes to guide the destinies of the patient suffering from the ravages of the typhoid bacillus must be one who constantly watches and is ever ready to assist nature in whatever way possible. He will unremittently guard against complications, and refrain from practicing meddlesome medication for the sake of doing something to create an impression on the family. He will abstain from routine measures as much as practical, regarding every case as, in a great degree, a law unto itself. He will do all in his power to prevent the infection of new cases. He must be prepared to intelligently and effectually treat symptoms as they may arise, and, above all, do everything possible to promote the physical and mental comfort of his patient. If his course of action be guided by these few simple rules, his every effort will be abundantly rewarded by the genuine appreciation he will receive from these unfortunate sufferers.

ILEUS.*

By A. BARNES HOOE, M. D., Washington, D. C.

This term is often used in any case of intestinal obstruction, which is wholly wrong and should be used only in those cases occurring in the small intestines; not even including those quite common forms of occlusion, ileo-cecal and ileo-colic intussusception.

Etiology.—Adhesions, hernia, diverticula, foreign bodies, mesenteric thrombosis and, formerly, often extreme purgation—though now ileus rarely occurs as a result of cathartics—and acute pancreatitis.

Prognosis depends entirely upon the time of recognition and the cause. If recognized before gangrene or perforation occur, the prognosis is good.

Diagnosis.—The signs usually come on suddenly with severe pain, followed by vomiting—which occurs earlier the higher the lesion—rapid pulse, pinched anxious facies, a typical picture of shock, or all the above signs may

come on gradually, extending over a period of several days. The vomitus at first consists of stomach contents, then bile, and, later on, intestinal contents, often containing blood. Ileus often occurs when the lower bowel is loaded with feces, so the fact that much feces is passed with enemata must not mislead one; gaseous distension is usually early to appear, and appears earlier the higher the lesion. The temperature is more often sub-normal than elevated, and is wholly out of proportion to the pulse. The quantity of urine may not be altered, though usually lessened, but the specific gravity is always high. With the above chain of symptoms and excluding obstruction of the large bowel, which is usually easy to diagnose, a diagnosis of ileus is justifiable; but to locate the obstruction is by no means easy in many cases, especially when there is no palpable mass. To attempt to locate the lesion by the character of the vomitus is worse than folly.

Treatment can well be divided into prophylactic and curative, both of which, however, are surgical. A few years ago when all abdominal cases were purged to an extreme before, and tortured to death with enemata after operation, intestinal paresis was a most common condition and was responsible for a large percentage of those cases in which the operation was a success, but the patient died. But since it has become so well recognized that purgation before and inundation after operation was conducive of so much harm, this condition is becoming comparatively rare, and, when it does occur, is usually the result of much handling or long exposure of the gut. This condition is the only ileus which does not demand operation at once. It will be spoken of as adynamic-ileus because it is a true adynamia, there being no strength at all in the gut walls. There is much we are inclined to do in this condition, but to endeavor to restore the tone of the bowel is the only rational method, and to do so, we have few drugs at our command; but with those few much is being accomplished.

If nausea persists, gastric lavage should be employed and all things withheld from the mouth. Salt solution per rectum (according to Murphy) and the salicylate of esserine, hypodermically, grain 1-30, should be given, which in the hands of many has proved most excellent, but requires from 36 to 48 hours to act. The infundibular extract has been used by some and much is claimed for it, but I have

*Read before the Tri-State Medical Society of Virginia and the Carolinas at Raleigh, North Carolina, February 22nd, 1911.

had no personal experience with it. Ileus, from any cause but the adynamic form, demands surgical operation at once; delay and purgatives are only making the chances of recovery much less.

With your indulgence for a few minutes more, I will report two cases of ileus. The first case is probably of no special interest to any one but myself; but to me it is of much interest from several points—first, because the patient recovered; and, second, because I was so much in error in locating the lesion before operation. At a recent meeting of the Medical Society of Virginia in Norfolk, Va., Dr. Stuart McGuire, in one of his usual interesting and instructive papers, advocated exploring all portions of the abdominal cavity whenever it was open. I was rather surprised at his radical idea and took issue with him, claiming that a surgeon, at least, should be able to locate the quadrant in which the lesion was; and while still of the opinion that this is true in most cases, in this particular one, I got about as far from the seat of trouble as it was possible to get and still get in the abdominal cavity; third, because I allowed myself to be so misled by the effect of the opium which had been administered before I saw the case.

Case 1. Was called on December 1st at 10:30 P. M., by Dr. Schrieber to see Mr. W. M., white, male, age 27, salesman in a dry goods house. Previous history: Has been rather wild for ten years, indulging quite freely in alcoholic beverages, but no serious illness until June, 1910, when he was suddenly attacked with fulminating appendicitis while at his place of business; was removed at once to the hospital where I removed a gangrenous appendix within three hours of the inception of the trouble; abdomen closed without drain; made complete and rapid recovery and was discharged from the hospital in two weeks. Since then has been in perfect health up to December 1st. Present history: Had worked all the previous day and retired about 10 P. M., feeling perfectly well, having had a copious bowel movement just before retiring. Awoke at 4 A. M. with severe abdominal pains in the epigastric region. Called in doctor at once who gave morphia and atropia. The doctor saw him again next morning when he was again in severe pain; magnesium sulphate was now given and was almost immediately vomited. Castor oil was later administered, but was also ejected.

Morphia and atropia were repeated several times during the day and an enema removed much fecal matter.

At the time I saw him pulse was good and about 100, temperature normal, some nausea, but the patient was perfectly comfortable from the effects of the morphia, except for the nausea. Pressure about the epigastrium caused pain; no mass could be detected; rectal examination revealed nothing; rectal tube was passed, the colon irrigated, and water returned clear; calomel, grains 3, with rhubarb, grains 10, in two capsules was given. At 11 A. M. the next day we again saw him, and found his condition much worse, pulse 120 and of poor volume, temperature normal, facies very bad, vomitus containing blood, upper portion of the abdomen distended and sensitive; palpation of the upper half caused severe pains, but was stood well over the lower quadrants. Operation was advised at once, suspecting pancreatitis or mesenteric thrombosis. He was moved to Sibley Hospital, taken at once to the operating room and, under ether, a right rectus incision in the upper quadrant was made. The intestine was found to be greatly distended and of mahogany color. It was followed down rapidly to about eight centimeters from the valve where a knuckle of gut had fallen through a band extending from the cecum. After freeing the gut, a gangrenous spot, one centimeter in diameter, was found about five centimeters above the constriction, which was inverted with the Lembert suture. The abdomen was closed with drainage, much free fluid having been found in the cavity, and the patient returned to his bed. A blood count just prior to operation showed leucocytosis of 18,600. On December 3d, the day following the operation, the temperature reached 104.1, pulse 132, but by the third day after operation the temperature had reached normal, and so continued. Nausea persisted for a week after operation. The patient made an uneventful recovery and was discharged on December 24th.

Case 2. Clara B., white, female, seven, Catlett, Va., referred by Dr. J. E. Knight, was admitted to Sibley Hospital, December 25th, at 4 P. M. Had been unable to secure any history previous to the present illness except that she had been perfectly well all of her life until December 21st last, when she had severe abdominal pains and Dr. Knight was called in. He gave some treatment without satisfactory re-

sults and a diagnosis of intestinal obstruction was made. I saw her at 4 P. M., on the 25th, a pale delicate child vomiting blood, apparently, moribund. Her father stated she had not had a bowel movement since Wednesday morning, he knew, and he did not know how long before that, until this day while coming down on the train, he thought, perhaps, they had moved. He also stated that she had vomited seven lumbricoid worms during the previous night.

Examination: There was a large mass in the left upper quadrant, which from the peculiar resiliency, together with the history, caused a diagnosis of obstruction from ascaris lumbricoids. Incision was made through the left rectus over the mass, which proved to be the jejunum distended with lumbricoids to a diameter of 5 centimeters. The distension was so great they could easily be seen through the wall and had the appearance of cord wrapped around a spool. Great care was necessary to avoid rupturing the gut, which was brought out of the abdomen and opened. Two hundred and seventy-four worms were removed. The gut was closed, cleansed and replaced, and the abdomen closed as rapidly as possible. Many worms could be felt both above and below the obstruction, but because of the almost hopeless condition of the child, no attempt was made at this time to remove any more than enough to relieve the obstruction. Her pulse ran between 90 and 105, was intermittent and weak; while her temperature varied from 99 to 100. Small doses of morphia were given to control pain and lessen peristalsis. On December 26th. at 8.00 P. M., 1-120 grain salicylate of esserine was given, which acted on the 28th, when a worm was passed. The stools contained millions of ova. On alternate days, beginning on the 30th, calomel and santonin, of each, one grain, were given, each time bringing worms with the stool until January 8th, after which no more were passed while in the hospital. She improved very much and was discharged January 15th, apparently perfectly well and free from lumbricoids, though there were still some ova in the stools. While in the hospital, 430 worms were recovered, 274 removed by operation, 153 passed per rectum and 3 vomited, which together with the 7 vomited the night before admission, and the 31 Dr. Knight advises me she has passed since reaching home, makes a total of 478. A careful examination of the

stools revealed neither worms nor ova of any other species.

This case is interesting from several points. Obstruction from lumbricoids is rare in this climate. The number secured, with one exception, is the largest I have been able to find reported, and that case passed 5,000 worms in six years, but at no time was there obstruction. All of the worms in this case were practically the same size, about 10 centimeters in length, with one exception, and that was about 18 centimeters, which would seem to indicate that all the embryos were taken in at practically the same time.

The ovum of this parasite does not hatch in the intestines, nor does it require an intermediate host, but the embryos develop from the ovum in the dirt and are taken in by the host with food, water, or from dirty hands, and develop in the small bowel. Hogs, dogs and sheep are frequently hosts of this parasite.

That they develop rapidly is shown by the fact that a pup only a few weeks old died from them and post-mortem showed them free in the abdominal cavity, having gotten there through the bile duct and by perforating the liver.

The lumbricoid is a very energetic being and has been found in many different portions of the body. It has been known to emerge from every orifice in the human body. Cases are reported where they have made their escape through the anus, vagina, urethra, umbilicus, mouth, nares, and even gotten up through the Eustachian tube and out through the ear. Obstructing the bile duct seems to be a favorite pastime with them.

- 1220 Sixteenth Street, N. W.

IMPORTANT ASPECTS OF THE TREATMENT OF TYPHOID FEVER.*

By WM. RUSSELL JONES, M. D., Ph. G., Richmond, Va.

Assistant Professor Practice of Medicine, University College of Medicine; Visiting Physician to Virginia Hospital, etc.

On account of the location of the primary lesions of typhoid fever, attention to the condition of the alimentary canal is a matter which first engages the efforts of the physician in a given case.

The digestive function is always disturbed to a greater or less extent. The powers of assimilation are likewise impaired. Loss of appetite

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is a physiological expression of the patient's inability to utilize the articles of food to which he is accustomed in health.

The first thing to be done is to prepare the alimentary canal for the reception of suitable articles of food, and, later, to maintain it at the point of highest degree of efficiency possible under the adverse conditions present. To accomplish the first of these indications, the initial purge is of the highest importance. All offending material, which consists of putrefying and fermenting articles of food, should be removed from the stomach and intestinal canal as soon as restrictions of diet are imposed. For this purpose small doses of calomel are administered at intervals of one or two hours, and the calomel is followed by the administration of a saline or a dose of castor oil. Patients in whom diarrhœa is an early symptom should have 1-10 grain doses of calomel at intervals of two hours until one grain has been taken. This may be followed by one drachm of magnesium sulphate or simply by a soap-suds enema. Patients who have constipation should be given three grains of calomel, five grains of colocynth, and one-fourth grain of aloin, divided into four doses, and administered at two hour intervals. This dose is to be followed by a dose of a saline or of castor oil.

The use of such purgation in the early stages is perfectly safe, but it should never be employed after the first week. Necrosis and sloughing begin between the eighth and tenth day, and purgation at or subsequent to this period would be extremely dangerous. Evacuations from the intestines should be promoted, after the first week, by the soap-suds enema, to which turpentine may be added if there is much distension. The enema should be given daily when persistent constipation is manifested.

Diarrhœa may be present, when the ever-sensitive mucous membrane of the intestine is endeavoring to rid itself of offending material. Under these conditions, irrigation with normal saline solution through the rectal tube would be indicated. It is seldom advisable to use astringents for the diarrhœa; if this symptom is not kept within bounds by saline irrigations, the astringents may be employed. A diarrhœa should not be considered excessive unless the patient has more than four or five evacuations in twenty-four hours.

Even when great care is observed to properly regulate the diet, a portion of the food may

escape digestion and undergo decomposition in the intestine. Secondary infection must also necessarily take place during the process of sloughing in the local intestinal lesions. Just how much these two factors contribute to the degree of elevation of temperature we are unable to determine; but when the colon is kept free from accumulations by proper irrigation in the manner suggested, the temperature is favorably modified and toxæmia is diminished.

The use of intestinal antiseptics is supposed to result in restraining to a greater or less extent these sources of toxæmia. Many of the antiseptics advocated are irritant to the stomach and consequently do more harm than good. This is particularly true of some of the new synthetic organic compounds. In preference to these we may use the liquor chlori compositus or chlorine water, of the U. S. P., with every confidence in its efficiency as a most powerful antiseptic, and without fear that it will act injuriously on the stomach. This substance is a greenish-yellow liquid, of strong odor, but without irritant properties when diluted. It contains chlorine, chloro-nitrous and chloro-nitric gases in solution, and corresponds somewhat in chemical nature to the hydrochloric acid of the gastric juice. Chlorine water may be given in the dose of two to four drachms, every two to six hours, well diluted with water, through a tube. The only objection that may be advanced to the use of chlorine water is its disagreeable odor, and this may be overcome by proper dilution, and by covering the glass with a piece of perforated cardboard, through which the patient takes his medicine by means of a glass tube.

Dietetic treatment is another one of the very important indications. The mucous membrane of the alimentary tract is hypersensitive. The quality of the digestive juices is impaired, and the quantity is reduced. These conditions lessen the patient's powers of digestion. Unfortunately, at this time, the febrile condition hastens tissue metabolism, especially with reference to the proteid materials of the body, as is manifested by increased elimination of nitrogen in the urine.

The opinion of the medical profession in regard to the proper diet for febrile conditions has undergone many changes. It has not only varied at different periods in the history of medicine, but is not uniform at the present time in reference to the particular articles of food to be used.

Hippocrates fed his fever patients upon

wine and barley gruel—a starvation diet. Graves, about the middle of the present century, discarded the starvation method and advocated the practice of feeding fevers.

Experience and pathology would indicate that as much nutrition should be supplied as can be properly utilized by the patient without undue tax to his digestive organs, and without leaving a residue to undergo putrefaction or decomposition and thus contributing to the toxic conditions already present. The cases which are carefully guarded against these sources of toxæmia often run such a mild temperature as to suggest the idea that the typhoid toxin alone may not cause a sufficient elevation of temperature as to require any special treatment for this symptom.

The first essential of the diet is that it should be of a fluid character, or should consist of such substances as immediately become liquefied upon entering the stomach. The use of soft solids, such as raw oysters or rare scraped beef, is not advisable, because they are imperfectly digested and add greatly to the typanites and fever by their decomposition. The use of moderate amounts of gelatin, which immediately becomes liquefied upon entering the stomach, is permissible, especially in cases having constipation.

In addition to a consideration of the physical properties of the food, the question as to what nutritive materials the diet should contain is one of importance.

Investigations have shown that the most prominent feature of metabolism in fever is a great increase in the destruction of the proteid of nitrogen-containing tissues of the body. This is probably caused by an insufficient supply of nutrition to meet the demands of increased heat production, and also to the destructive action of the toxins of typhoid upon the proteid tissues.

In view of these conditions, it might be suggested that we supply an increased quantity of proteid material in the diet, but this is not practicable, since it has been shown that it is not possible to establish a condition of nitrogenous equilibrium in fever on any reasonable quantity of food. Excessive quantities of proteid food would also increase the products of nitrogenous waste, and thus overburden the kidneys and increase toxæmia.

Instead of increasing the proteids in the food, the indications for diet would call for the use

of the proteid-sparing forms of food, which consist of gelatin, fats and carbohydrates.

Gelatin, an albuminoid, can only be used in limited quantities, because the end products of its metabolism are so similar to those of proteids that injurious results might be expected to follow. Fats are unsuitable, because they are distasteful to the patient, and will produce derangement of the digestive function. Carbohydrates meet the indication, because they may be given in forms in which they may be easily digested, and, reaching the tissues, may exert their function of proteid-sparers.

Proteid forms of food should also be supplied to meet the requirements of nutrition, but along with these an abundant supply of carbohydrates should be furnished.

Warren Coleman and P. A. Shaffer, of Cornell University Medical College, conducted valuable experiments in reference to the liberal use of carbohydrates in the diet of typhoid fever patients. Their argument is stated in the following language by Thompson:

"Granted that the minimum nutrition requirement of a normal man at rest, to prevent starvation, is 2300 calories; in fever the increased heat production averages twenty per cent., which added to the 2300 calories makes more than 2700 calories required to maintain nutrition and prevent emaciation in fever. To this Rubner would add another ten per cent. to make good the stimulation of metabolism caused by food, hence about 3000 calories represent the daily requirement of the average typhoid fever patient. Carbohydrates are better tissue sparsers than heat producers, and Coleman and Shaffer found that by supplying a maximum of carbohydrate in the form of the easily assimilable milk sugar * * * not only saved much loss of tissue nitrogen, but in some cases resulted in actual increase in the patient's weight." * * *

"The plan of feeding is to give a diet as rich as possible in calories and to furnish as many of the calories as possible in the form of carbohydrates."

Many of the forms of liquid food supplied to typhoid fever patients consist almost entirely of salts and nitrogenous materials. This is true of albumen water and the various forms of animal broths which are so largely used. The nutrition value and proteid-sparing qualities of broths may be increased by the addition of such carbohydrates as flour, corn-starch, rice gruel.

barley gruel, etc. The addition of these carbohydrates also makes them more palatable and satisfying to the patient. A further addition to the nutritive value of broths may be obtained by the addition of an egg, which may be beaten in at a temperature of 160 to 180 degrees. In this way considerable variety may be offered in the form of broths. Besides these variations, the broths should be made from different kinds of meat from day to day, using beef one day, chicken the next, and mutton the next, etc.

Milk as an exclusive diet is not suitable; some patients have a distaste for it and are unable to digest it. It will not be properly digested if used for a great length of time, even with those who have a desire for this form of nourishment. The relative proportion of carbohydrate to proteid in milk is too low, the ratio being 3.5 per cent proteid to 4.9 per cent. carbohydrate. The best results from the use of milk may be obtained by modifying it in some way, as by adding an ounce of lime-water to a glass of milk, or by using one-third milk and two-thirds Vichy, the former to be employed in diarrhoea, and the latter in constipation. These alkalies aid in the digestion of milk by causing a finely subdivided precipitate of casein in the stomach. A further modification of milk for increasing its nutrition value is to boil it with some form of carbohydrate, as barley, rice, or oatmeal gruel, or some of the other forms of farinaceous food.

Buttermilk, orange or lemon albumen, strained vegetable soup, etc., are all valuable forms of liquid nourishment, and they should be used in conjunction with the other articles named so as to give as much variety to the diet as possible.

Cases of typhoid treated in accordance with these principles usually run a mild course and make a rapid recovery. The temperature does not usually rise to a point above 102 1-2 degrees; hemorrhage and perforation are not liable to occur; great toxæmia, extreme emaciation, and ravenous hunger are usually averted.

9 West Grace Street.

Proceedings of Societies, Etc.

AMERICAN PROCTOLOGIC SOCIETY.

(Concluded from page 358.)

Intestinal Stricture Following Ileo-Rectostomy--Report of a Case was Read.

By FRANK C. YEOMANS, M. D., New York City, N. Y.
J. X., a man 46 years of age, was always

strong and well, but suffered from severe constipation of many years standing. In October, 1909, an anterior sigmoidopexy was proposed for "prolapse of the sigmoid." Temporary relief followed, but three months later "peritonitis" developed. The same surgeon operated again, freed numerous adhesions, divided the ileum just proximal to the colon, closed the abnormal end and implanted the oral end of the ileum into the rectum. Relief of the constipation was prompt but when he first consulted Dr. Yeomans, in July, 1910, it had returned in an obstinate form with all the symptoms of a marked auto-toxemia super-added.

The proctoscope passed easily, but no opening could be discovered in the rectum or the sigmoid. An excellent radiograph, by Dr. L. G. Cole, proved the colon and sigmoid to be unobstructed.

Concluding that the feces, following the path of least resistance, were accumulating in the colon, Dr. Yeomans did an appendicostomy at the N. Y. Polyclinic Hospital, December 16, 1910. Irrigations through the appendix relieved all symptoms for ten weeks. Constipation and toxemia then returned, however, and he performed an exploratory laparotomy March 14th, 1911. The ileum ran down into the left side of the pelvis and was lost in a mass of dense adhesions. A broad lateral anastomosis was made between the ileum, just above the adhesions, and the sigmoid. The patient reacted well from the operation, but developed a double pneumonia, 18 hours later, to which he succumbed on the fifth day. The urine was suppressed the last 24 hours of his life. The bowels moved on the second day, and, thereafter three or four times daily. At the autopsy no peritonitis was found. The specimen removed, consisting of ileum, sigmoid, and rectum intact, showed perfect union of the recent lateral ileosigmoidostomy. The remarkable feature of the old end-to-side ileo-rectostomy was that the opening was so constricted that it would scarcely admit a 16 F. catheter and physiologically amounted to a stricture.

The noteworthy features of this case were:

1. Reverse peristalsis of the colon, evidenced by the large quantities of feces expelled by the irrigations through the appendicostomy.
2. The radiograph was valuable in demonstrating a patent sigmoid and colon, thereby

proving that the obstruction was in the small intestine.

3. Failure of the proctoscope to reveal the site of the opening does not discredit the diagnostic value of that instrument, but shows the extreme degree of contraction of the opening.

4. The many actions of the bowel signify clearly that the physiological function would have been permanently restored had the patient survived the pneumonia. The practical lesson derived from a study of the case is that lateral anastomosis is superior to end-to-side union, especially in the presence of inflammation.

Syphilis of the Ano-Rectal Region.

By LEWIS H. ADLER, Jr., M. D., Philadelphia, Pa.

The author related the history of two cases of syphilis in which no outward visible effects of the patients' grave condition existed, except about the anus. In both instances, the anus was surrounded by syphilitic condylomata; the parts were bathed in a fetid sero-purulent discharge and the patients' mouths were affected with mucous patches. In one case the patient was markedly improved by the use of salvarsan and the other one improved under the ordinary mercurial treatment, but disappeared from observation before a cure could be effected.

The writer then took up the consideration of the usual manifestations of the disease as affecting the localities under consideration, stating that the primary lesion—always a chancre—occurs about the anal region much more frequently than is usually supposed. That chancre of the rectum proper, in this country, is a very rare occurrence. Where sodomy and other unnatural vices are practiced, infection may, and, possibly does occur with greater frequency. That females are oftener affected than males, and while the occurrence of the initial lesion about the anus or within the rectum of men, is almost positive evidence of the practice of sodomy, in women, the possibility should be remembered of the infection of these parts arising through contact with the male organ, or from the vaginal discharges.

That the diagnosis of all doubtful cases of syphilis can now be definitely determined when the patient's blood shows a positive Wasser-

mann reaction, and by finding the presence of *spirocheta pallida*.

Attention was called to the fact that cases of ano-rectal syphilis develop the usual symptoms of the disease as when it affects other parts of the body, and, next to the mouth and throat, the anus is the most frequent site for mucous patches.

Attention was called to the hereditary or congenital form of the disease; and, among the tertiary lesions, the following principal varieties were enumerated: Gummata, destructive ulceration, stricture, ano-rectal syphiloma, and proliferating proctitis.

The article concluded with a brief consideration of the treatment of the disease in which attention was directed to the necessity of care being exercised in looking after the hygiene in all its phases; that the constitutional treatment of the disease should not be commenced until a positive diagnosis is established; that, as no one form of mercury, or any one of the various methods of its administration may be employed successfully in all cases, the individual requirements of each person should be the guide.

Ehrlich's remedy, salvarsan, had in several instances been employed with excellent results, but the author would not depend upon its employment alone, believing that mercury should supplement its use.

In the use of salvarsan, it was advised that no one treat patients with it, except those specially trained in its preparation and administration.

The Limitations of the Use and the Methods of Employing Local Anesthesia in Rectal Surgery.

By LOUIS H. ADLER, Jr., M. D., Philadelphia, Pa.

The author quoting from a recent article of a distinguished proctologist states: "Patients seriously object to a general anesthetic and because of this and the fact that most minor ano-rectal operations can be painlessly performed under local anesthesia induced by sterile water, or a one-eighth of one per cent. eucaine solution, I have discarded general narcosis in about eighty per cent. of my rectal operations."

In taking exception to this general statement, he questions the wisdom of sending it broadcast and advocating a method which in the hands of one not particularly skilled in

rectal work would in his opinion only lead to disaster.

He calls attention to the water logging of the tissues, when sufficient anesthetic be used, whether cocaine, eucaïne, sterile water, or other agents, and to the subsequent retarding of the recovery of the patient and the danger of hemorrhage from allowing patients to be about on their feet, citing a case which proved conclusively the force of his arguments.

The author claimed a thorough understanding of the underlying conditions can rarely be made without the aid of general anesthesia. The latter when administered by a competent anesthetizer is not attended with any more danger or risk than the indiscriminate employment of local anesthesia.

He calls attention to the fact that it is essential to remove the anesthetic when the sphincter is divulsed, as deep inspiration thus induced would cause too much of the drug to be inhaled suddenly, and might cause alarming or fatal results.

Rectal diseases which may be treated under local anesthesia he considers under two divisions: (1) Those admitting of office treatment; (2) those requiring treatment at home or in a hospital.

In the opinion of the author, external piles or other excrescences around the anal region, some fissures-in-ano, and abscesses (of not too large an extent), are the only affections coming within the range of operations which can with propriety be performed in the office under local anesthesia. He warns the operator that trivial fistula often have diverticulæ and are not readily discoverable except under general anesthesia.

Under the second heading he speaks of internal colostomy and internal hemorrhoids and warns the operator that the temperament of the patient must always be taken into account. Highly nervous patients will not stand manipulation of the intestines, and the abdominal muscles are apt to be rigid.

The author mentions the different drugs used in local anesthesia, the vibratory method of Hirschman, the methods used in getting the parts anesthetized, and the after treatment.

The trend of the article is not to throw cold water on the valuable procedure of local anesthesia, but to insist that the cases must be suitable and in the hands of men of experience.

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

(Concluded from page 359.)

NEURASTHENIA AND ITS TREATMENT BY ELECTRICITY.

Dr. F. Howard Humphris, of London, England, read this paper. Rest is only applicable to the milder forms of neurasthenia. The patient should not have too much to do with his relations. The treatment most successful in my hands is that by one or other of the various forms of electricity. The form of electricity must vary with each class of case. Where the blood pressure is subnormal the application of the static brush discharge to the bare spine is the most successful. During treatment the patient is encouraged to go on with his work, keeping regular hours and avoiding alcohol and fatigue. In cases where the arterial tension is high the direct D'Arsonval current is employed. For insomnia use the hot mustard foot bath. Where the appetite is poor give bitter tonics.

THERMOTHERAPY.

Dr. Byron S. Price, of New York, read this paper. Body thermotherapy of 350 F. and upwards is especially indicated as a general and rapid eliminant in septic and toxic conditions, and is of great importance as an addition to the action of currents. It reflexly produces profound tonic metabolism and elimination (through the nervous system and increased activity of circulation), measured by urinalyses, decrease in hypertension and later improved health. All depression to nervous and circulatory systems appears to be completely prevented by short, high temperature treatments, and by maintaining the peripheral and glandular circulation. This is accomplished by inaction on the part of the patient, and immediate transfer to the hot water bath, followed by salt rub and suitable friction massage, and upwards of five hours absolute rest.

TREATMENT OF POLIOMYELITIS ANTERIOR.

Dr. Grafton E. Day, of Collingswood, N. J., said that the prophylaxis of this disease consisted in quarantine, disinfection of the secretions, and the giving of urotropin to those exposed. Urotropin administered in the beginning of an attack will prevent paralysis in the majority of cases. Curative measures are, prompt and thorough elimination, with calomel, castor oil or an enema; the ice cap; easily digested foods; diuretics; hot pack to increase

diaphoresis; the administration of urotropin from the beginning; lumbar puncture to relieve intense pain; sedatives where other measures fail to relieve suffering; wrap the affected member in cottonwood; threatened deformity should be met by the use of properly fitting braces; massage and active and passive movements are most valuable. Galvanic stimulation should not be delayed beyond three weeks. Radiant light and heat are also good.

PYELONEPHRITIS TREATED BY THE STATIC WAVE CURRENT, WITH EXHIBIT OF CASE.

Dr. S. Leslie West, of Philadelphia, exhibited a case, a girl 15 years of age, who presented the usual symptoms of parenchymatous nephritis complicated by a suppurative pyelitis. The Morton wave current was given over the region of the kidney and liver, followed by the brush discharge over the whole length of the spine. Improvement began from the start. Treatment was continued for twenty-five days. The patient has been well since the first of this year.

SUB-ACROMIAL OR SUB-DELTOID BURSITIS, OFTEN MISTAKEN FOR BRACHIAL NEURITIS.

Dr. Park S. Breneman, of Lancaster, Pa., Since beginning my investigation of this condition I have examined twenty-five or thirty cases with pain in the arm more or less marked that might lead one to believe that bursitis was present. In eight of these cases a shadow of the bursa or contents of the bursa is distinctly shown. In one, a traumatic case, a shadow is shown which I took to be a fracture of the tuberosity of the humerus with uplifting of the fragment, which might easily be mistaken for a bursa. In nine cases a more or less distinct shadow in the position of the bursa is shown. In the balance of the plates the condition of the shoulder appeared normal. All cases should be examined with the X-ray before treatment. In the acute condition where the shadow is not found the arm should be put at rest and palliative measures used. Where the shadow shows the remains of a bursitis the adhesions should be broken up under an anesthetic. Electricity and massage play an important part in the treatment.

Analyses, Selections, Etc.

Psychotherapy in the Care of Psychasthenia Which Tends Towards Inebriety.

Williams, Washington, says that a sense of

inadequacy is the most frequent cause of the desire for alcohol or other narcotics. It is unscientific to exhort a man not to over-indulge this bent. The proper course is to remove the cause of his tendency. The sentiment of insufficiency is only one of the chief symptoms of the state known as psychasthenia since the work of Professor Janet. It is a malady which shows itself sometimes in states of intolerable anxiety and distress; sometimes by morbid, unreasonable fears; sometimes, by insistent ruminations upon the most trifling events; sometimes to impulsions to perform absurd actions; always by vacillation of the will; often by mannerisms and erratic gestures, and by the wandering mania or the life of solitude of the recluse.

This is the disease which we have to relieve in order to prevent the greatest part of the inebriety of to-day. For the people who suffer from this unfortunate disorder, a good hygiene is necessary, of course; but even more important for their recovery are psychologic measures. An analysis of their mentality is the first requisite. When this is accomplished, a re-education must be begun towards the acquisition of tolerance for feelings of inadequacy. After this, mental poise is given by means of a helpful philosophy. These ends cannot be accomplished by mere precept. The psychotherapist devises practical exercises in control by means of gradually increasing periods of mental concentration.

The exercises must be performed with the greatest intentness and exclusive attention while quiet and alone. About ten minutes in every two hours during the day should be devoted to the work.

First Day. (1) For concentration in the control of movement, willing the act very clearly.

(2) For concentration upon impressions of touch. Take in hand a marble, eyes closed. Think of its (a) size, (b) contour, (c) smoothness, (d) consistency, each separately.

(3) For concentration upon impressions of hearing. Listen to the tick of a watch for thirty seconds, noting (a) loudness, (b) musical note, (c) regularity, (d) grouping of sound into series.

(4) For concentration upon impressions of sight. Look at a marble, thinking of its various properties as ascertained by touch, as well as its color.

Second Day. (1) Bend the right arm very slowly with full consciousness of each move-

ment and by willing the act very clearly. (2) The same as (2) preceding, substitute a cotton spool for the marble. (3) Listen to a street-car as to the same qualities as in the foregoing (3). (4) As the preceding (4), substituting the spool for the marble.

Third Day. (1) The same as (1) preceding, using the left leg. (2) Repeat (2) preceding using a lead pencil. (3) Repeat (3) preceding in imagination. (4) State the character of (4) preceding as well as its esthetic qualities.

Fourth Day. (1) Same as (1) preceding, but with right leg. (2) The same as (2) preceding, but with a small bottle. (3) Repeat in imagination. (4) The same as (4) preceding, substituting a picture.

Fifth Day. (1) Bend the trunk forward. (2) Repeat (2) preceding, but without the object. (3) Repeat (3) preceding in imagination. (4) Repeat (4) preceding from memory.

Sixth Day. (1) Bend trunk to the right. (2), (3) and (4) as before.

Seventh Day. (1) Bend trunk to the left. (2), (3) and (4) as before.

When perfected, each exercise can be done in imagination by intense concentration which is necessary by both physician and patient in order to attain success. Mechanical performance is worse than useless. The principle is really that of the psychomotor discipline used by Brissard and Meige in the re-education of tiquers.—(*Medical Record*, October 28, 1911.)

The New York Board of Inebriety.

By an act of the 1910 Legislature, a Board of Inebriety was authorized. It also calls for the establishment of a hospital and industrial colony to receive those suffering from habitual inebriety. The board is made up of two physicians, two clergymen and the Commissioner of Charities and the Commissioner of Correction, ex-officio. * * * A secretary is to be appointed, and there are to be, in addition, as many field officials, clerks and other employees as may be required and as the Board of Estimate may authorize. There are to be central offices in all the boroughs. These offices must always be kept open; and at each office a bureau of records of each male arrested for public intoxication is to be kept. The board is further authorized to acquire a site for an industrial colony and hospital for the care and treatment of inebriates. Whenever a person is arrested for public intoxication, the Board must be noti-

fied by telephone and the name and address given. A field officer investigates the case and finds out if the prisoner has any person depending upon him for support. If it is the prisoner's first offense, he is released after recovery from his intoxication. Before being released, he must give the address and names of any persons depending upon his support; also his place of employment and his previous record.

The law provides "that any male person who is a resident of the city of New York and who is adjudged by a court of record to be an inebriate, may, upon his own application, or upon the petition of a relative, or of the Commissioner of Public Charities, or of the Board of Trustees of Bellevue and allied hospitals, and upon the certificate of two medical examiners in lunacy, be committed by such court to the Board for a period of not less than one year nor more than three years."

The definition of an inebriate given by the act is: "A person who is incapable of properly conducting himself or his affairs, or is dangerous to himself or others, by reason of habits of periodical, frequent or constant drunkenness, induced either by the use of alcoholic or other liquors, or of opium, morphine or other narcotic or intoxicating or stupefying substance."

If the law works out as it has been planned, it will do much to limit public intoxication; it does that which all of the temperance measures do not do, that is, it punishes the person for public intoxication and, at the same time, provides for the care of those who are dependent upon the one at fault.—(*Editorial, Long Island Medical Journal*.)

A Source of Error in the Test for Occult Blood in the Feces.

William A. Newbold, Philadelphia, says that it is well known that the ingestion of bloody meat, of iron as a medicine and of certain starchy foods will sometimes give a slight color reaction when testing for occult blood; but that he has never read or heard of a source of error which he recently discovered. During the examination of a patient suspected of having duodenal ulcer, the patient made the statement that he was passing blood by the bowel. There was but slight evidence of any local bowel irritation, and little in the patient's history to point to the presence of a duodenal ulcer. A specimen of the feces was obtained and, superficially, it did appear that there was blood

mixed with the stool. The guaiac-turpentine test gave a deep blue color, but a microscopic examination of the liquid feces failed to reveal any blood-cells, although the deepness of the color reaction in the chemical test indicated a quantity of blood. A careful microscopic examination of the feces revealed the presence of minute portions of a material that resembled blood which proved to be watermelon pulp.

It then occurred to the author that the coloring matter of the melon pulp might give the characteristic chemical test for blood, and an experiment proved this to be true. It was also found that the expressed juice of the melon gave a similar color reaction, but in the latter experiment the color did not prove to be so dark a blue as when the pulp of the melon was used.

As watermelon is so common an article of food during the heated season, there must be many persons, both invalids as well as healthy individuals, who, if their feces were subjected to a chemical test for blood, would give a definite blue color reaction because of the coloring matter of this fruit.—(*Journal American Med. Assoc.*, November 4, 1911.)

Treatment of Diabetes Acidosis by Infusions of Sugar.

If a solution containing sugar be introduced into the rectum without producing a movement of the bowel, at least 50 per cent. of the sugar is absorbed into the system, but the quantity of glucose voided is not increased thereby. An explanation of this interesting fact is sought in the fact that when the sugar is taken by mouth, it must enter the portal circulation; while from the rectum, it obtains direct entrance into the general circulation. Balint, of Budapest (*Berliner Klinische Wochenschrift*, Aug. 21, 1911), introduces the solution by the drop method of Murphy, so that in the course of twenty-four hours as much as an ounce and a half of dextrose may be utilized by the system. He found, however, that to secure the best results this must be done while the patient was on a light diet of not more than 800 calories from bouillon and cheese.—(*Medical Council*, November, 1911.)

The Role of the Myocardium in Heart Disease.

The more we have learned about the pathological physiology of the heart from the newer studies by means of venous pulse-tracings, cardiograms, and electrocardiograms, the more

it is borne in upon us that the function of the heart-muscle itself is what we wish to have most information about and what we know least about, says L. M. Warfield, Milwaukee. Thus far we have no accurate means of measuring the actual power of the muscle, especially its ability to carry on the circulation against the odds of valvular disease, arterial disease, or disease of the muscle itself. If the muscle is strong it will be able to stand enormous degrees of strain without becoming damaged. Hearts, the subject of valvular lesions, are not necessarily weak hearts, says Warfield. The important point to bear in mind is that it is not the valvular lesion which determines the breaking down of the heart, but rather the state of the heart muscle. The author does not mean to say that hearts with valvular lesions are in any sense as strong as normal hearts. Indeed, the very fact that there is a valvular lesion means almost invariably that the myocardium is more or less diseased, usually from the same cause that gives rise to the valvular defect. The normal heart has a wide range of flexibility and great reserve power. The heart with a valvular lesion is always encroaching upon its reserve power so that its range of reserve power is less than that of the normal heart. We have as yet, says Warfield, no means of diagnosing failure of heart-muscle until it actually fails. Time and again autopsy reveals such extensive myocardial disease that we wonder how such hearts could have carried on the circulation competently. The author asks us not to look to graphic records for our evidence of heart failure, but rather to the sensations of our patients, which are still the most valuable indications that the heart has failed to do its work.—(*Interstate Medical Journal*, October, 1911.)

Book Notices.

Diseases of the Anus, Rectum and Sigmoid. By SAMUEL T. EARLE, M. D., Professor Emeritus of Diseases of Rectum, Baltimore Medical College; Surgeon-in-Charge of Rectal Diseases, St. Joseph's Hospital, etc. 152 Illustrations. Philadelphia and London. J. B. Lippincott Co. 8vo. 476 pages. 1911. Price: Cloth, \$5 net.

This volume has been read with pleasure and instruction, notwithstanding it shows several evidences of careless proof reading and an amount of haste in preparation.

In some instances, chapters are misplaced; the one on Malformations of the Anus and Rectum should have followed that on Anatomy and Physiology, instead of coming between those on Fissure in Ano and Ano-rectal Fistula; Pathological Growths is found between those on Colostomy and Extirpation of the Rectum.

The quotations are numerous and long, thereby removing, in a measure, the personality of the writer.

Diphthongal spelling and the metric measures should have been followed in every instance or not have been used at all. In the use of proper names, we find a difference in spelling for a number of the same names.

In writing of local anesthetics, Earle believes cocain and betaucain are the best; makes a passing reference to alypin, expresses no opinion on quinin and urea hydrochlorid, but leaves the adoption of it to the individual operator, nor is there any mention of anesthesia by sterile water so long and successfully used by Mason, Gant and other operators. Ether is regarded as the best general agent; he, however, recommends nitrous oxide in the presence of pulmonary, renal, or cardiac affections.

The speculum devised by Van Buren (Lectures upon Diseases of the Rectum) was a modification of the Sims vaginal, and does not differ materially from the Earle model.

When treating fistula in ano, we are surprised no mention is made of the bismuth treatment which Beck and many others have used so successfully.

Earle's clamp is about the best so far devised; it permits a clean, thorough, and practically a bloodless operation. It differs from the clamps devised by Maclean and Erwin, in that it has neither shoulder nor slots for passing the sutures. Earle believes the clamp and cautery operation a superior one, but, in view of the strides surgery has made, he considers it antiquated and does not recommend it. In this matter there are many whose views will not coincide with his. Our author has not been satisfied with the injection treatment of hemorrhoids, although this too is advocated by many.

While we have seen fit to criticize the book in some respects, because of the author's ripe and extensive experience, we believe the volume will be of assistance to the general medical profession, and we recommend it as containing much of great value. The publishers have presented their part in excellent form. X.

Editorial.

The Rational Use of Drugs.

Drugs are two-edged swords, capable of cutting for good or evil according to the way in which they are used. Like the pathological conditions to which they are applied, they act, as a rule, in accordance with definite laws. If pure, and if administered with scientific judgment, they can be relied upon to accomplish their purpose, except in cases of idiosyncrasy, or in morbid processes not amenable to palliation or cure. When improperly employed, they may do more harm than the disease.

The almost nihilistic attitude of some medical men—especially surgeons—toward drugs, and the over-confidence of others in their potency are inter-dependent as cause and effect, and have resulted in passive or active damage to the patient, and in the begetting of a middle class of therapeutic agnostics who are floundering about in a sea of uncertainty, endeavoring to cure their patients with medicinal compromises.

We have recently read, or tried to read, a popular and widely-distributed book, in which the author, in order to support his claims to a certain health-preserving and health-restoring system, has quoted the opinions of a number of distinguished physicians and surgeons, who, whether in jest or in earnest, have discredited the value of drugs. No wonder that the credulous portion of the public has been misled and induced to belittle the practice of medicine by the very ones, of all others, who should have refrained from bringing their science and art into disrepute. It is to be regretted that the celebrated humorist and physician who first established the infectious nature of puerperal fever should have stated that, if all the medicine in the world were cast into the ocean, it would be all the better for the people and all the worse for the fishes. The wit may be brilliant, but the indiscriminating mind of the laity may be hopelessly poisoned.

On the other hand, poly-pharmacy may be as much a confession of ignorance or lack of judgment as no pharmacy at all. The diagnosis of disease often depends, in a measure, upon the manner in which a particular drug acts. Hence, a compound containing a number of in-

gredients intended to meet each symptom of the disease is apt to fail of the desired effect and to keep the physician in the dark with regard to the action of his remedies. There may be a beautiful display of chemical re-arrangements in the bottle, or of rebellion in the stomach. If vomiting occurs, so much the better.

The recent graduate in medicine is apt to be a poly-pharmacist; while the experienced doctor, unsuccessful at times in his efforts to combat disease, is prone to question the value of his medicinal agents or to disregard the newer and valuable additions to the materia medica.

It behooves the practitioner to make his therapeutics as simple and as exact as possible. There is not one set of laws for one school and another set for another school. All that is to be known should be known by all. The use of single drugs, or of several drugs administered separately, is advisable, in order that the effects of each can be accurately estimated. Only reliable drugs should be used, and the patient should be impressed with the doctor's confidence in his own armamentarium. Synergists may be required, and compatible combinations are frequently indicated. Let the main morbid condition receive its appropriate drug. If the agent fail, let it be changed or fortified by another. If several drugs are indicated, let it be seen that they antagonize the disease and not each other.

It is needless to add, that in the rational treatment of disease, the patient should first be placed under the operation of hygienic laws, which, in the majority of cases, have been more or less violated. When this is done, the problems of drug-giving will be much simplified, while the action of the drugs will be enhanced. Then will the skepticism of the physician give place to faith; the number of his successes will be increased; and, to a great extent, the ridiculing or unreasonable comments of the laity will vanish.

WILLIAM S. GORDON.

The Seaboard Medical Association of Virginia and North Carolina

Will hold its sixteenth annual session at Newport News, Va., December 5-7, 1911, with headquarters at the Warwick Hotel. The president, Dr. Clarence Porter Jones, Newport News, Va., and secretary, Dr. J. R. Parker, Goldsboro, N. C., have been working enthusias-

tically for the success of the coming meeting.

The evening sessions will be open to the public, and will be followed by entertainments for the doctors. A luncheon and oyster roast will prove pleasant diversions between the morning and afternoon sessions on the sixth and seventh. Dr. Jos. T. Buxton will also entertain the Association at a buffet supper on the sixth at the Elizabeth Buxton Hospital. Members are urged to bring the lady members of their families, as pleasant entertainment will also be provided for them. The scientific program promises to be excellent, and includes papers by a number of prominent invited guests, in addition to those by members.

Doctors eligible to membership are invited to become members.

The Virginia Public Health Association

Held its second annual session in Richmond, simultaneously with the meeting of the State Medical Society, Dr. Rawley W. Martin, of Lynchburg, presiding. A number of papers on topics of special interest to members of State and county boards of health, were read and freely discussed, and the meeting was pronounced most satisfactory. The 1912 session will be held in Norfolk, during the next meeting of the Medical Society of Virginia.

Officers for this meeting are: president, Dr. E. C. Levy, Richmond; vice-presidents, Drs. P. S. Schenck, Norfolk, and J. M. Shackelford, Martinsville; secretary-treasurer, Dr. Lucien Lofton, Emporia. In addition to the above named officers, the executive committee will include the following representatives of the various congressional districts of the State: Drs. J. H. Ayres, Accomac; E. F. Reese, Courtland; R. K. Flannagan, Richmond; Lucien Lofton, Emporia; J. S. Haile, Chatham; R. A. Moore, Phenix; W. F. Driver, New Market; F. M. Brooks, Swetman; P. B. Green, Wytheville, and I. R. Godwin, Fincastle.

Drs. E. C. Levy, P. S. Schenck and Allen W. Freeman were elected delegates to the American Public Health Association, which meets in Havana, Cuba, in December.

Memory of Surgeon General of the Confederacy Honored.

At the unveiling of a tablet, on November 17, to the memory of Dr. Samuel Preston Moore, Surgeon General of the Confederacy, Dr. George Tucker Harrison, of Charlottes-

ville, Va., paid a glowing tribute to his devotion and efficiency. This tablet, placed on the house at the northwest corner of Jefferson and Grace Streets, was unveiled by Dr. Moore's grand-daughter, and is inscribed,

SITE OF THE HOUSE IN WHICH

SAMUEL PRESTON MOORE
SURGEON GENERAL
CONFEDERATE STATES OF AMERICA
LIVED FROM 1863 TO 1865

This tablet is placed by the Confederate Memorial Literary Society
 A. D. 1911.

At the unveiling, a picture of Dr. Moore hung on one side of the tablet, and on the other was a wreath of flowers sent by the Richmond Academy of Medicine and Surgery.

The Shenandoah Valley (Va.) Medical Society

Met in Harrisonburg, November 22nd, with a good attendance. An interesting program was presented by the members and invited guests. Dr. Allen Freeman, who is connected with the Virginia Health Department, spoke on The Hygiene of Tuberculosis.

This Society was organized a little more than a year ago, and has increased so rapidly in numbers, that it is already prominently known as one of the district medical societies of this State. Meetings are held quarterly. Dr. Walter Cox, of Winchester, is secretary.

Augusta County (Va.) Medical Association.

There was a large attendance at the last meeting of the Association in Staunton, on the 15th, at which time five new members were added to the ranks. Addresses were made by Drs. H. Fitzhugh White and M. J. Payne, the newly-elected and retiring presidents. Clinics were held from 9 A. M. until noon, when the members were taken by automobiles to the home of Dr. Herman Welland, who entertained the Association most handsomely upon completion of the scientific program.

The Petersburg Medical Faculty,

At its annual meeting, on the 16th of November, elected officers for the coming year as follows: President, Dr. J. R. Beckwith; vice-presidents, Drs. H. A. Burke and E. L. McGill; corresponding secretary, Dr. W. E. Harwood; recording secretary and treasurer, Dr. W. C. Powell, and Court Medice, Drs. Osborne, Rennie, Leigh, Martin and Jones. Upon

adjournment of the business session, the members partook of a banquet at the Stratford Hotel.

The Medical Society of Northern Virginia and the District of Columbia

Met in Washington, D. C., November 15. Before taking up the scientific program, cases were exhibited at the Emergency Hospital. Several interesting papers were read, after which the Washington members entertained the visitors handsomely at the University Club. The next meeting will be in Leesburg, Va., in May, 1912.

The Montgomery County (Va.) Medical Society

Met at Blacksburg, Va., November 15, Dr. H. D. Ribble presiding. The secretary, Dr. A. M. Showalter, was at his desk. On account of the large amount of executive business before the Society, there was no special subject for discussion. The next meeting will be held in Christiansburg, early in February, and Dr. H. B. Pack, of Blacksburg, was appointed to lead in the discussion on Quantity of Antitoxin to be Used in Diphtheria.

State Conference of Charities and Corrections.

Attention is again called to the ninth annual meeting of this conference to be held in Roanoke, November 26-28, Dr. Roy K. Flannagan presiding. Addresses will be given in various churches, white and colored, on Sunday, while meetings on the other days will be held at the National Business College. A large attendance of charitable workers is expected, and there will be a number of interesting speakers.

New Hospital for Greenville, S. C.

A new hospital to be known as the City Hospital, will be opened in Greenville, S. C., on or before January 1, 1912. It is to have sixty beds, and will be thoroughly modern in all its equipment. Chas. F. Hard is president of the movement.

Red-Cross Christmas Seals

Have been shipped to all parts of Virginia, by the State Anti-Tuberculosis Association, and

will be sold again this year to aid in the fight against tuberculosis. In every locality, the proceeds of the sale will be divided between the National, State and Municipal agencies, 50 per cent. of the collections in each city or town being used for the alleviation of local sufferers, the other half to be divided between the National and State Associations.

Obituary Record.

Dr. Benjamin Brown

Died suddenly at his home, Nokesville, Va., November 14. He was apparently in his usual health until bedtime the night previous to his death, when he was paralyzed and never regained consciousness. Born at Amherst C. H., Va.; December 24, 1877, he attended the Virginia Polytechnic Institute and the Medical College of Virginia, graduating from the latter in 1899. He was a member of the State and local medical societies and of the Board of Health of Prince William County. His wife survives him. Dr. Brown was exceedingly popular in his section, and was held in highest esteem by the medical fraternity.

Dr. William J. H. Bellamy,

One of the best known and most popular citizens of Wilmington, N. C., died at his home November 18, aged sixty-seven years. He was a graduate of the New York University Medical College, in the class of 1868. He was prominently identified with the medical profession in his State, and was an ex-member of the North Carolina State Board of Medical Examiners. Dr. Bellamy served the Confederacy most valiantly in the War Between the States.

Dr. Edward Sanderson McKean

Died at his home at Goshen Bridge, Va., November 13, 1911, after a long illness, aged about sixty years. After graduating in medicine from the University of Virginia in 1881, he located in Rockbridge County, Va., where he has since practiced his profession. He was a member of the Medical Society of Virginia, and prominent in the affairs of his section.

Dr. Cornelius T. Smith, Jr.

Died at the home of his father, Captain C. T.

Smith, of Croxton, Va., November 5, 1911, after a lingering illness. Dr. Smith was born in 1870, graduated in medicine from the Columbian University, D. C., in 1900, and joined the Medical Society of Virginia in 1902. He is survived by his widow, and by his father, mother and two sisters.

Dr. Walter Washington,

Born in Caroline County, Va., eighty-seven years ago, died at his home in Westmoreland County, Va., November 5, 1911. He is survived by three sons, two of whom are physicians—Drs. Warner and Richard Washington, the former of New York, and the latter of Washington, D. C.

Judge John H. Ingram,

Who delivered the address of welcome at the recent meeting of the Medical Society of Virginia, in Richmond, died in that city, November 17, after a short illness, from pneumonia complicated with heart trouble. He was one of the best known and most beloved jurists in the State and had been many times honored by his profession. His loss will also be felt by the doctors, among whom he counted many friends.

Resolutions on the Death of Dr. John A. Hillsman.

In the death of Dr. John A. Hillsman, the Richmond Academy of Medicine and Surgery is again called upon to mourn the loss of one of its honored members. Full of years and abounding in the good works of a life well spent in the services of suffering humanity, he has fallen asleep, leaving the testimony of a clear conscience, in charity with the world and of good repute among his professional brethren. A man imbued with great chivalry, with the highest standard of ethical honor, he could always be depended upon to ring true, no matter what the emergency; and he has left to his surviving brethren the heritage of an example they may well emulate. An unassuming and courteous gentleman, he ever performed fearlessly his duty as he saw it; and stood square with the world under all circumstances. His high courage was evidenced by a remark made to a friend when discussing war experiences: "I am ashamed to have come out of the war alive; there were so many opportunities for a man to die for his country." Therefore, be it

Resolved, That this society place upon its records the high estimate in which Dr. Hillsman was held by his professional brethren.

Resolved, That a copy of these resolutions be sent to his family, that they be spread upon the minutes of the Academy and be published in the daily papers and medical journals of this city.

The above preamble and resolutions were adopted at a meeting of the Richmond Academy of Medicine and Surgery held on November 8, 1911.

MARK W. PEYSER, M. D., *Secretary*.

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NOTES ON CEREBRAL LOCALIZATION.*

By H. STUART MacLEAN, M. D., Richmond, Va.
Visiting Surgeon at the Virginia Hospital and City
Hospital.

Until a few years ago the brain resembled in a way the knowledge most of us acquired at school about Africa. We knew the shape of the brain and some of the principal points on the exterior, but so far as localizing any centres, or sources of impulse, the rest was marked "unexplored" just as was the map. In the past fifteen years, however, wonderful strides have been made in identifying with certain portions of the cortex and base of the brain the site of various centres controlling many of the more important body functions. The work of Broca, Mills, Beevor, Sir Victor Horsley, Bramwell, Campbell, Hill and others has contributed to our enlightenment on this subject until now there are few, if any, areas in the brain concerning which at least strong suggestions accord them control over certain functions.

Generally speaking, there are three classes of cases giving rise to the necessity for, and symptoms of cerebral localization. Traumatic conditions, abscess and other inflammatory conditions and tumors. In this brief paper no attempt will be made to differentiate between these, but simply to outline the important symptoms associated with the several localities.

Strange as it may seem the first problem which presents itself is that of recognizing that a cerebral irritation really exists. Given a case in which such a condition is known, or suspected, much of the difficult task of elimination is done, and the work of selecting special symptoms and their grouping to prove a special seat of the disease is comparatively easy. So frequently the symptoms which are suggestive

are subconscious, or of such a nature as to cause the patient either to overlook them, or consider them so immaterial and vague as to be unworthy of mention. Particularly is this true of tumors, etc., of the temporo-sphenoidal lobe or the frontal lobes. Cases are frequently seen for instance, treated for neuralgia, hysteria, headache, rheumatism, eye strain, and similar apologies for a correct diagnosis, which by a careful scrutiny of the apparently immaterial phenomena, and a process of elimination, would demonstrate indisputable evidence of brain lesion.

It is not my intention to attempt a detailed description of the various symptoms connected with the different cerebral centres, but to briefly mention some of the prominent and peculiar symptoms relative to the better known centres.

The excito-motor area is, of course, the most frequently thought of and considered, yet, except in traumatic cases, it is involved quite infrequently. The reason for its involvement in cases of injury are mainly, (a) its relatively exposed position; (b) its proximity to the immediate distribution of the middle meningeal artery, and with these may be considered the marked or spectacular character of the symptoms arising therefrom.

The following are the areas to be considered:

1. The excito-motor or motor area.
2. Pons and medulla.
3. Occipital lobe.
4. Frontal lobe.
5. Temporo-sphenoidal lobe.
6. Parietal lobe.
7. Cerebellum.

1. *The motor area.*—Hemorrhage, abscess, adhesions or tumors in this locality give rise to characteristic symptoms which vary only in that they may be paralytic or epileptiform and affecting single centres, as an arm, leg, or single group of muscles, or a whole side. Hemorrhage usually involves the greater portion of the tract and is recognized by the associated history and

*Read before the forty-second annual meeting of the Medical Society of Virginia, at Richmond, October 24-27, 1911.

the successive and rapidly deepening involvement, while a tumor, or circumscribed irritation of slower development, is more apt to cause irritation of the centre accompanied by the explosive symptoms of general cortical irritation, as the epileptic seizures with especial irritation of certain groups of muscles.

Disturbances of sensation arise in the post-central convolution, that one lying just behind the fissure of Rolando, while motor disturbances result from damage to the pre-central convolution. As is well known, the sensory and motor centres of the same portions of the body are located on the same planes, those of the feet and legs being highest up at the median line, and the others following in reverse order to the position of the patient in the erect posture.

2. *The pons*.—Lesions at this point are characterized chiefly by crossed paralysis, or paralysis of the cranial nerves on the affected side and paralysis of extremities, or spinal nerves supplying the opposite side.

The medulla.—Lesions at this point produce the classic symptoms of bulbar paralysis, the atrophy of the muscles of the mouth, tongue, lips, pharynx and larynx, together with the secondary effects upon extension to the cardiac and respiratory centres. Difficulty in moving the tongue to speak easy letters as v, n, or l, also difficulty in chewing and swallowing occur, together with choking, due to entrance of food into the larynx, and relaxation of the lips and escape of saliva from the corners of the mouth.

3. *Occipital lobe*.—Injury to, or disease of this section gives rise principally to visual disturbances, although total blindness follows lesions of the internal capsule. The greater portion of the occipital lobe, on its mesial border, is the seat of visual impressions. The left side supplying the left side of each retina and the right side the opposite. The lingual and the occipital lobules, both on the exterior and the mesial surfaces, are the special sites for these centres, whilst the rest of the left occipital lobe controls color perception, memory of seen objects and the higher psychic functions of vision. The dominant symptom is the one of hemianopsia, or bilateral blindness of the corresponding halves of the retinae. Should the lesions be situated along the course of the optic fibres anterior to the occipital lobes, the hemianopsia occurs just the same, but there are other symptoms present which direct the attention away

from the occipital lobe. Anterior to the termination of the optic fibres in the optic thalamus damage to these fibres will produce the hemianopsia accompanied by loss of pupillary reflex, because of the involvement of the fibres passing from the oculo-motor nuclei to the external geniculate bodies and the optic thalamus. This symptom known as Wernicke's sign, is of especial value in that its existence with blindness of corresponding halves of both retinae means interruption of the optic tract between the eye and the optic thalamus and geniculate bodies, while its absence in the presence of bilateral hemianopsia points conclusively to occipital involvement.

4. *Frontal lobe*.—Little is known definitely as yet of the functions of much of this region. Defects in memory and the higher intellectual faculties are supposed in a general way to point to a lesion of the anterior portion. The writer has recently operated upon a case of Jacksonian epilepsy, following an infected fracture of the left frontal bone, in which the only symptoms were those identified with the epileptic seizures, which, moreover, had no suggestions of localized motor trouble. Operation revealed obliteration of the entire frontal lobe anterior to the motor tract and its replacement with loose areolar scar tissue. The intelligence of the patient, however, (he was a foreigner), was such as precluded a close study of the finer psychic symptoms.

In the post frontal portion is located the writing centre and the centre for conjugate movements of the head and eyes.

In the lower portion of the frontal lobe, and presumably always on the left side in right handed persons, in the third frontal convolution, or Broca's convolution, is said to be located the centre of vocal or motor speech. Disease of this area gives rise to motor aphasia. Inability to speak, while understanding speech, always points to pressure on this area. It should be borne in mind that interference with the other centres concerned in speech or expression mechanism, may give rise secondarily to motor aphasia. This emphasizes the necessity, as referred to elsewhere, of studying not only the symptoms, but the order in which they develop.

5. *Temporo-sphenoidal lobe*.—Until recently this was considered as absolutely latent, or at least unexplored, but the latest investigations

in this region have produced most excellent results. Much of the difficulty has been due to the fact that the symptoms are of the kind that have to be searched for and not such as the patient will necessarily notice, or think worthy of comment. Along the upper border, just below the fissure of Sylvius, in the posterior two-thirds of the superior temporal lobe is located the auditory centre, while below it will be found the centres for word and object hearing (sensory aphasia), while on the median aspect of the temporal lobe will be found the olfactory and, below it, gustatory centres. A recent article by Kennedy establishes clearly a group of symptoms to be demonstrated in lesions of this area. He states that "an inability to understand heard speech and abolition of all memories of spoken words" results from "destruction of the posterior part of the left superior temporal gyrus; and that destruction of the left supra-marginal and annectent gyri will cause failure to understand written speech or even will abolish the power of recognizing familiar objects and that destruction of the association tracts between these two centres will cause failure to recollect the name of an object seen and recognized." He further states, with reference to temporal tumors, "one characteristic may be said to be constant: a depression of the power to recall words, especially the names of persons, places and objects." Illustrating this point, a patient recently operated upon by the writer for circumscribed clot over the temporal lobe, gave the following symptom, when asked:

Q. "How long have you been here?"

A. "Two cars."

Q. "You don't mean 'cars;' do you mean weeks?"

A. "No, I don't—"

Q. "Days?"

A. "Yes, days. I been here two days, I couldn't think of it."

These cases may be characterized by a gustatory or olfactory aura occurring just before the convulsions or other evidences of cortical irritation. Such a symptom is evidently due to the passing hyperexcitation of one or the other of these centres produced by the congestion or increased tension preceding the outbreak.

These patients, if closely questioned, will describe a marked odor, possibly pleasant, but more frequently offensive, or it may be that of some familiar or pungent substance, or will describe a peculiar taste, usually an offensive

one, which they seem to realize, but cannot clearly describe.

6. *Parietal lobe.* Here is located the centre which controls the ability to recognize an object while held in the hand, or while handled, with the eyes open or closed, known as stereognosis. Tumors of the left superior parietal lobule will be marked by a lack of ability to recognize or name unseen objects when felt or handled. Tumors of the left inferior parietal lobule and angular gyrus are characterized by word-blindness, or the inability to comprehend written languages or signs. Should the lesion be subcortical there is apt to be bilateral hemianopsia without the presence of Wernicke's sign. Impingement of the tumor or clot, on adjoining areas, as the post-central convolution, temporal lobe or occipital lobe, will of course give rise to additional symptoms which mark the spread of the disease.

7. *Cerebellum.*—Tumors in this region may be intra- or extra-cerebellar. Generally speaking, they are characterized by cerebellar ataxia, vertigo, nystagmus, atonia and paresis. The ataxia is characterized by lack of co-ordination of different groups of muscles during their activity, the patient being perfectly conscious of this inco-ordination, but unable to help it. The arm is affected markedly and the finger-nose test is helpful not only in diagnosis, but in localizing, as the symptoms are more marked in the limbs of the affected side. The patient has a tendency to walk, or stagger, toward the affected side, and, as a result, carries the shoulder of that side somewhat advanced. Vertigo arises from interference with the deep fibres of the eighth nerve, to quote from Stewart and Holmes.

"Thus, when the patient complains that his giddiness consists in the displacement of external objects in front of him, it is found that, both in the intra- and in the extra-cerebellar growths, this displacement takes place from the side of the lesion to the opposite side. Whereas, when the sense of giddiness depends upon rotation of the patient himself, there appears a distinct difference; in the intra-cerebellar growths the rotation of self is from the side of the lesion to the healthy side, while in the extra-cerebellar ones the reverse is true, and the patient feels as if he were turning from the healthy side to that of the lesion."

Disorders of hearing from interference with

the acoustic portion of the eighth nerve are produced by extra-cerebellar lesions. This is produced by involvement of the nerve, as, for instance, when the lesion is located in the lateral recess. The interference with hearing is probably due directly to pressure upon the nerve. Among eye symptoms present in these lesions will be found the following: Deviation of the eyes toward the affected side in acute cases, while deviation to the opposite side is more commonly noted in older cases. Nystagmus is a characteristic sign. It usually appears as a slow, jerking movement of the eyes toward the affected side, when an effort is made to turn the eyes in that direction. Upon looking in the opposite direction the movement is quicker and less marked. Relaxation or loss of tone of the muscles of the body and extremities on the side corresponding to the location of the lesion. This is not in the form of a paralysis, nor is there any evidence of conclusive or contracted irritation, as would occur in a cortical or pyramidal affection. At the same time there is more or less rotation of the head, the chin being turned upward to the opposite side and the occiput being drawn downward and to the affected side.

In conclusion, there are general symptoms which should always lead the physician to suspect intracranial lesion. These symptoms have little or no focal value, but should prompt further and closer study of the symptoms.

a. Headache is an almost invariable symptom of brain lesion. It frequently is slight or may be variable, but is always more or less constant. Its location has no significance to the site of the lesion unless it occur in connection with a painful scar or similar condition. The reason for this pain is not clearly understood as the dura and cortical areas are not sensitive. Probably it is due to the intracranial tension arising from the lesion.

b. Vomiting of a projectile character is common in acute lesions, but has less frequency in the chronic or slower lesions. Its absence is not at all conclusive of the absence of a lesion; its presence is a most important symptom. It has no focal virtue, being due to general pressure.

c. Optic neuritis or choked disk is a regular accompaniment of cerebral pressure. It varies from a slight swelling of the retina and optic nerve fibres in the early stages to the full fledged

choked disk. The fact that the patient has no impairment of vision should not be taken as evidence that there is no optic neuritis, as it can exist to a marked degree without the patient's knowledge. Various theories have been advanced as to the cause of choked disk, opinions being held that it is either of an inflammatory nature, producing a local neuritis, or on the other hand, that it is a mechanical phenomena due to greatly increased intracranial tension with the resultant pressure effects. An optic neuritis or choked disk may not be found in every case of intracranial lesion, but it will occur in seventy-five per cent., and furthermore, when found it is the strongest evidence of brain tumor or similar lesion. The neuritis is usually bilateral and is not supposed to offer much aid in determining the affected side, although it has been suggested that upon close examination it will be found that the optic neuritis is slightly worse, or the condition slightly more advanced on the affected side.

I have purposely omitted all reports of cases in this paper, as its objects were to emphasize the fact that various cerebral centres when irritated, respond with definite symptoms, that these symptoms can be recognized and studied, and finally, the paper has been simplified and shortened in the hope that a few points concisely stated may the more readily suggest a solution or aid in arriving at a conclusion in some case which may bother some fellow member.

406 West Grace Street.

THE EFFICIENCY OF THE DIFFERENT OPERATIONS FOR PERINEORRHAPHY.*

By GEO. P. HAMNER, M. D., Lynchburg, Va.

As the title of my paper clearly implies, I have no new operation to offer the Society for the restoration of the pelvic floor; nor do I propose to enter into a detailed description of the methods and technique of the various old and tried operations which are so familiar to us all. Neither do I desire to draw myself into a controversy by attempting a description of that phantom object, the perineal body.

My sole purpose is to call attention to some of the most popular methods of perineal repair now in vogue, and to discuss the merits, or de-

*Read before the forty-second annual meeting of the Medical Society of Virginia, at Richmond, October 24-27, 1911.

merits, as the case may be; their relative utility, the time occupied by the operation, and the ultimate results.

I will say, however, that the simplest and clearest conception of the anatomy of the perineum that I have seen, can be found in a paper published in the *Journal of the American Medical Association*, of April 4th, 1908, by Howard Hill, under the title, "Restoration of the Pelvic Floor."

I wish to make it quite clear that all references to the repair of the perineum in this paper are to secondary operations.

Of all the operations for perineorrhaphy, Emmett's is undoubtedly the most widely known and extensively practiced in this country at the present time; while Hegar's, Kelly's modification of the original Emmett, and the flap-splitting operation of Lawson Tait, with Saenger's and various other modifications of the flap operation, have their advocates; and which, in many cases with only superficial lacerations without any muscular involvement, have given good results.

There are other cases in which the results have appeared satisfactory, but in which the pelvic conditions have not been relieved because of the superficial nature of the work, the membrane and fascias being neatly apposed while the underlying muscles have not been brought into perfect apposition, or have remained altogether untouched. This is certainly an important particular in which the above methods are quite generally deficient. No perineal laceration of any appreciable extent ever occurs without injury to, or at least separation and displacement of the levator ani muscles; and when this occurs, no operation which does not restore them, along with their fascias, the skin and mucous membrane, to their respective normal positions and conditions, or as nearly so as possible, is complete and efficient.

In a study of the methods for performing the afore-mentioned operations in which restoration by denudation and suturing is attempted, it is noted that in only one is there any reference made to suturing the levator ani muscle; and in that one (Kelly's modification of the Emmett), the work is done blindly: that is, the muscles are brought up, or supposedly so, along with their fascias and without being exposed to view; while in the literature on the flap-splitting operations the levator ani muscle has been

entirely ignored. In the methods of many of the various gynecologists the precise restoration of the perineum occurs only in the theory of the operator; for as a rule the operation consists of little more than the removal of an area of mucous membrane, shaped according to the operator's fancy, and the union of the wound edges: and if the claim is made that in certain sweeps of the needle certain muscles or tissues are caught and apposed, without actual exposure, there is certainly no absolute assurance of it.

For the past two years I have used a submucous operation, which seems to me more rational, and has given far more satisfactory results in my hands than any I had previously attempted. I shall enter into a very brief outline of the operation as done by me, referring any who may be interested in it to an excellent description of the technique in detail, accompanied by the thoroughly clear and perfect illustrations of the work step by step, as done by the originator. Dr. W. Wayne Babcock, of Philadelphia, published in the *Journal of the American Medical Association*, of May 15th, 1909, under the title, "Submucous Perineorrhaphy;" and from whom I take the liberty of borrowing this outline, as I do not think his description could be improved upon.

Technique.—The parts are carefully aseptized in the usual manner and the anus covered by a sterile towel or gauze pad. The labia being separated and supported by the fingers of an assistant, the sharp point of a pair of scissors is introduced into the subcutaneous cellular tissue just external to the orifice of Bartholin's gland. The incision is carried around the posterior margin of the introitus just external to the carunculae until the same point on the opposite side is reached. A pair of Braum's tenaculum forceps is then fastened to the outer edge of the posterior part of the incision to serve as a retractor.

The second step is the exposure of the levator ani muscle, the edge of which is located by one finger against the lateral wall of the vagina and a second finger or thumb in one side of the wound. With the muscle now located, a pair of sharp pointed scissors is thrust through the depths of the wound to the edge of the muscle, opened and withdrawn, thus penetrating the remains of Colles's fascia, the two layers of the triangular ligament and perhaps the thin and

at times almost inconspicuous layer of the transversus perinei profundus, which lies between.

The opening is enlarged by stretching with the fingers, or if necessary, by a few touches of the knife, and the finger is passed into the opening close to the lateral vaginal wall until the edge of the levator ani is felt, which is freed on its inner and outer side by the finger, grasped with a pair of tenaculum forceps, and pulled into the wound; bearing in mind that on the side of greater laceration the muscle will usually be found to have the deepest situation. The isolation and exposure of the muscle is usually easy and requires but a few seconds of time. Should the muscle be found to be completely divided, which is rarely the case, the ends should be sought and brought together with buried catgut sutures. The opposite edge of the levator ani is then exposed and brought into the wound in the same manner.

The third step of the operation is the repairing of the vaginal mucous membrane, which is best done with a curved needle and No. 1 plain or iodized catgut, beginning near what was the posterior commissure, and using a continuous suture engaging the submucous cellular tissue a short distance from the wound edges and uniting the upper border of what was a transverse incision, or a U-shaped incision, according to the degree of tension put on it, in a vertical manner. Thus the part of the vagina that was near the posterior commissure comes to occupy a point several centimeters above the introitus and the length of the vagina is restored. Where there is much redundancy a second row of sutures may be applied outside suture No. 1, and so rolling the submucous tissues together that the convexity on the mucous surface of the posterior wall of the vagina is markedly increased. Suture No. 1, which has thus made a partial submucous closure of the vaginal wall, is then temporarily laid aside still threaded in the needle to be finished later.

The fourth step now consists in uniting in the median line the edges of the levator ani muscle, which are located by the attached tenaculum forceps placed upon them when they were brought into the wound. Interrupted, continuous or mattress sutures of chromic or iodized gut may be employed, but care should be made that the muscle should not be united so far anteriorly as to unduly constrict the orifice.

Some of these sutures should catch the underlying submucous tissue to prevent the formation of dead space. Posteriorly, a simple or figure-of-eight suture is employed to bind together the various structures that meet here, and if necessary, to give support to the sphincter ani. In certain cases, it may be desirable to reinforce the sphincter ani by splitting off strips from the anterior edges of the levator ani, wrapping these about the sphincter and fixing them in place by sutures.

Rarely is a similar procedure necessary anteriorly to reinforce the vaginal support. Should the sphincter ani be injured or completely divided, of course the ends should be sought and sutured together in this case as well as any of the other operations. With the union of the levator ani muscles the rectum, anus and vagina will be found to ascend to a higher position in the pelvis, and to be carried forward toward the pubis.

The fifth step of the operation consists in the suturing of the inferior fascial plane to reinforce the muscular support. The outer edges of the incision through which the levator ani muscles have been brought are united in the median line by continuous, interrupted, mattress or imbricating sutures of No. 1, iodized or chromic catgut.

This support, which includes the urogenital trigone, affects the layers of the triangular ligament and the deep transversus perinei muscle. Some of the sutures should catch the underlying muscles, as in the preceding steps, to obliterate any dead space.

The sixth and final step of the operation consists in completing suture No. 1, which after completing the submucous union of the vagina is continued posteriorly under the skin, uniting the subcutaneous and Colles's fascia until the posterior portion of the incision is reached.

The two ends of suture number one are then tied, binding together the various structures that have been united; the ends cut short permitting the knot to sink under the skin.

Thus there has been built up in layers a perineum consisting of united mucosa, muscle, fascia and skin. All the sutures being buried and the layers bound compactly together, leaving practically no dead spaces.

The line of skin union may be sealed with iodoform collodion, or a small strip of iodoform gauze introduced into the vagina and per-

mitted to hang down over the incision. The gauze serves as a guide to the nurse in catheterizing and protects the incision. I have the patient catheterized every six hours for three days, the line of incision dried and powdered with aristol after each catheterization. A daily douche may be given also for the same length of time.

The patient may sit up on the tenth day and cautiously resume her duties after two weeks.

The principle points of the operation are:

First, no tissue is removed or extensive denudation made.

Second, buried, absorbable, layer sutures are used exclusively, none of which penetrates the skin or mucous membrane to act as a seton to carry infection to the deeper tissues; and leaving no sutures to be removed later, or portions left behind to cause subsequent irritation.

Third, the operation is done from the outside of the vagina, rendering the introduction of sutures easier and the exposure of tissues better than with those operations done within the vagina: also leaving no possibility of scar tissue in the vagina even should the incision gape to a slight degree.

Fourth, each structure is sutured with precision under the guidance of the eye; there is no blind groping with the needle for tissues not seen and perhaps not felt.

Fifth, each of the layers of the perineal floor—vaginal wall, submucosa, muscular supports, fascial planes, and skin—are united serially in layers after the plan of the better types of herniotomy, and not brought together with one long curved suture through all, such as the "Lifting" suture in the Emmett operation.

Sixth, the vagina is not separated from the rectum, and therefore there is no danger of injuring the bowel.

The operation has the following advantages:

It restores and increases the length of the vagina instead of shortening the posterior wall of the vagina as occurs with many of the older operations. Although no tissue is removed it is questionable if any other operation is capable of producing greater narrowing of the external portion of the vagina or of affording greater support to the anterior vaginal wall. The operation restores the normal "H"-shaped section to the vagina instead of destroying or obliterating the lower lateral sulci.

The proneness of knots in catgut to untie

when exposed on a mucous membrane is obviated by the burial of all knots in the tissue.

1016 1-2 Church Street.

FURTHER OBSERVATION ON LANE KINK OF THE ILEUM IN RELATION TO CHRONIC APPENDICITIS.*

By C. C. COLEMAN, M. D., Richmond, Va.

The great safety with which most abdominal operations can be performed has done much to develop the pathology of conditions which have until recently been very imperfectly understood. Earlier diagnosis and improved technique give the surgeon an opportunity to relieve morbidity more frequently than to save life.

In the management of acute abdominal conditions surgical treatment is generally satisfactory, and especially is this true of acute disease of the appendix. The diagnosis of this condition at the present time is rapidly succeeded by preparation for immediate operation, and the waiting policy adopted by some surgeons in the past when confronted by acute inflammation of the appendix, has been superseded by an aggressive attitude which puts acute appendicitis among the emergencies. In pure simple chronic appendicitis removal of the appendix will generally bring relief from the associated neuroses, indigestion and various stomach reflexes, which we now recognize as a part of the clinical picture of such conditions. The uniform sequence of cure to operation has been definitely established by observation based on thousands of cases of this disease.

There is a class of patients, however, presenting symptoms of chronic appendicitis who are operated upon without the relief which usually follows appendectomy. It is therefore reasonable to conclude that such patients had additional pathology, which was not observed and removed during operation. Stanton, in a recent discussion of this subject, states that the results from surgical treatment of supposed chronic appendicitis are not satisfactory, and in this statement he includes the results of both the amateur operator and the surgeon of experience. The symptomatology and pathology of cases of so called chronic appendicitis must be revised if we would secure the same satisfactory results as have been attained in the

*Read before the South Piedmont Medical Society, at Danville, Va., November 21, 1911.

surgical treatment of chronic cholecystitis or gastric ulcer. If by such a revision, chronic appendicitis can be put upon a definite basis so as not to be made responsible for certain forms of chronic indigestion and vague abdominal disturbance due to other causes, the number of patients who fail to receive benefit from operation will be materially diminished. We believe that the diagnosis of chronic appendicitis has frequently covered conditions for which the appendix was only partially or not at all to blame.

Mr. Lane, of London, has called attention to a form of obstruction of the terminal ileum, chronic in type, which causes symptoms very similar to those of chronic appendicitis. While it is somewhat unfortunate that any pathology should be designated by the name of the individual giving it prominence, this form of obstruction is best known as Lane kink of the ileum and is found in the ileum within six inches of the termination. The recognition of this condition as a distinct lesion is of great surgical importance, for if the slightly diseased appendix is removed, and the obstruction is left, the patient experiences no permanent relief. We believe that frequently in cases in which the appendix shows so little disease as to make us doubtful of its responsibility for the patient's symptoms, the trouble is due to such a kink of the ileum.

Martin's theory of the formation of these kinks is perhaps the most satisfactory, but no one cause will explain all cases. According to this theory the various kinks and obstructions of the abdominal alimentary canal are directly due to certain evolutionary or congenital defects associated with the erect position of man. In these cases of defective development there is a tendency to ptosis of all abdominal viscera with consequent kinking at points of peritoneal attachment. These points are the hepatic and splenic flexion of the colon, duodenum, sigmoid and terminal ileum. Ptosis of the organ suspended by these peritoneal ligaments causes angulation at these points and in a general way this is the mechanical explanation of Lane's kink. The ileum near its termination has a short mesentery which permits of very limited motion. It is therefore to some extent a support to keep the cecum out of the pelvis, when this organ tends to prolapse. In Lane's kink the cecum sags into the pelvis where it

does not belong and carries the end of the ileum with it. In its descent it makes counter traction against the short mesentery of the ileum, thus producing a sharp bend in this part of the intestinal canal. The majority of cases can be accounted for in this way, but there is a certain number caused by pressure of the intestines from above, or by a prolapse into the pelvis of that portion of the ileum proximal to the last six inches. The effect of all these kinkings is to produce chronic obstruction. Lane's kink of the ileum may exist alone, or may be associated with certain other congenital defects of the abdominal structures, such as general enteroptosis and ptosis of kidneys, liver and uterus.

The natural result of this form of obstruction is to cause stasis of the intestinal contents with the formation of local and general toxic products. These kinks become sites of irritation and bacterial infection, thus leading to a low grade of inflammation and thin adhesions. A favorite location for one of these bands or adhe-

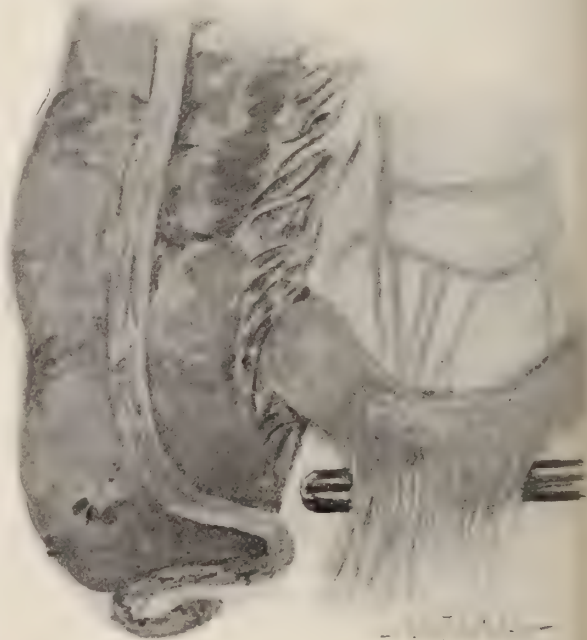


Figure 1. Lane Kink and Band. Type most frequently seen by author. The narrowing of the ileum by band which rolls it over and downward on its mesentery is plainly shown. Forceps placed under constricting band. From drawing by Dr. C. H. Mayo.

sions is between the cecum and that portion of the ileum opposite its mesentery. This band has been found by us in a number of cases with-

in the past year and is the key to the diagnosis of the condition. (Fig. 1 and 2.) It rarely extends farther than four inches on the ileum and sometimes forms a little pocket with the cecum and posterior leaf of the mesentery of the ileum. It sometimes binds together the two arms of the kink or more frequently it rolls the intestine over on the under leaf of the mesentery. (Fig. 3.) In either instance the lumen of the intestine is decreased. These bands have a tendency to contract and thus the

bands were present. We believe that these adhesions are generally due to the chronic inflammation resulting from local bacterial infection, in association with congenital defects.

The symptoms of Lane's kink of the ileum resemble those of chronic appendicitis and the differentiation is all the more difficult because the location of each is about the same. These patients are frequently of a neurotic type and the symptoms are regarded as manifestations of neurasthenia. They suffer a dull dragging pain or discomfort, slightly to the right of the umbilicus. Sometimes this pain becomes acute and colicky due to disturbed peristalsis or obstruction.

The following case, operated upon by Dr. J. Shelton Horsley, entered the hospital with a history rather typical of Lane kink, which is reported as follows: Mr. M., a rather thin man, 29 years of age, has suffered for several years with occasional nausea and continuous constipation. Family history of no particular importance. Health has been very good with exception of present trouble. Has had recurrent attacks of pain radiating through right side of abdomen, no rigidity or tenderness on pressure. These pains were stinging in character, causing great weakness. Operation showed typical Lane's kink and band and slight degree of inflammation of the appendix. The trouble in the appendix probably did not cause the patient's symptoms.

From the cases operated upon during the past year, I select one which illustrates the constancy of right iliac pain with acute colicky attacks. Mrs. O., age 32, complaining of spasmodic pain in the right side of abdomen with soreness. Family history of no significance. Has never been sick excepting an attack of pneumonia eighteen years ago. Was operated upon eight years ago for some slight vaginal trouble. Has had attacks of indigestion. No other incident of importance in past history. First noticed pain in side three years ago. Since then has had recurrent attacks of sharp pain, which lasted only for a short time, though there has always been an uneasy feeling in right iliac region. During attacks of pain patient would be nauseated. Operation by Dr. Horsley. The abdomen was opened through a McBurney incision and the ileo-cecal region explored. The appendix had a slight grade of chronic inflammation. The interest-

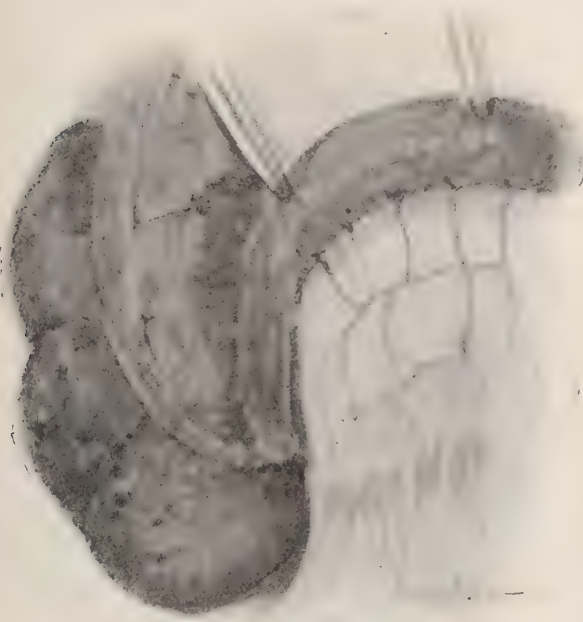


Figure 2. Band shown in Figure 1 is divided, allowing ileum to be restored to its normal calibre.

obstruction is directly increased in the ileum. The fixation of the cecum by these adventitious bands causes increased stasis in this portion of the alimentary canal and this accounts to some extent for the auto-intoxication which is generally present. The contraction of these bands of inflammatory tissue pulls the ileum downward and increases the obliquity of its insertion into the cecum, so that instead of entering the latter at nearly a right angle, it runs upward and almost parallel to the cecum for some distance before making its anastomosis. Distention of the cecum with gas will therefore have the same effect as a distended urinary bladder upon the valve-like insertion of the ureters and still further increase the obstruction to the progress of the contents of the ileum. During the past year we have seen about a dozen well defined cases where such kinks and

ing feature of the operative findings, however, was adhesions extending from the cecum to the last five inches of the terminal ileum. These adhesions were attached to the free border of the ileum and by their traction downward rolled the ileum over on its mesentery and diminished its calibre by at least one-half. These adhesions seemed to be of inflammatory nature and their division caused little hemorrhage and allowed the intestine to be restored to its normal size. The appendix was also removed. The patient recovered promptly from the operation and has since been entirely relieved from all abdominal symptoms.

In such cases the responsibility for the patient's sufferings clearly seems to rest upon the adhesions rather than the appendix and the sequence of cure to operation seems too clear cut to be a mere co-incidence. In an analysis of the operative results of a series of one hundred cases of chronic appendicitis, Stanton found that nearly all of his cases not cured by operation were those whose chief complaint was right iliac pain. The attacks of colicky pains are frequently relieved by rest, and this fact is pointed out by some writers as a valuable one in differentiation between this condition and chronic appendicitis. There may be general toxemia of the intestinal region and the patient is usually worse after prolonged exercise on his feet. The classic picture of auto-intoxication as described by Lane, is frequently seen.

Conditions which have heretofore been regarded as associated with or due to chronic appendicitis may, with reasonable propriety, be assumed to rise from a Lane kink. Lane has recently shown that in chronic obstruction of the terminal ileum there is stasis and distention of the duodenum. We know that under normal conditions infection does not readily reach the gall-bladder through the common bile duct. Yet when there is stasis in the duodenum, infected products of auto-intoxication may easily produce cholecystitis. It has been shown that stomach reflexes may arise from any portion of the small intestine. Pylorospasm is frequently due to chronic appendicitis. It is reasonable to assume that the chronic obstruction produced by a Lane band could produce the same reflex disturbances of the stomach. The appendix will usually be found mildly diseased and this rather constant association of a

mild grade of chronic appendicitis has delayed the true conception of the clinical meaning of Lane's kink. In the past we have treated such cases by simply removing the appendix when the symptoms for the most part were clearly due to Lane's kink. The patient is generally improved for a time at least, by rest in bed and simple diet, but he soon returns with practically the same symptoms as he had before operation.

From the experience of others who have seen this condition in a number of cases operated

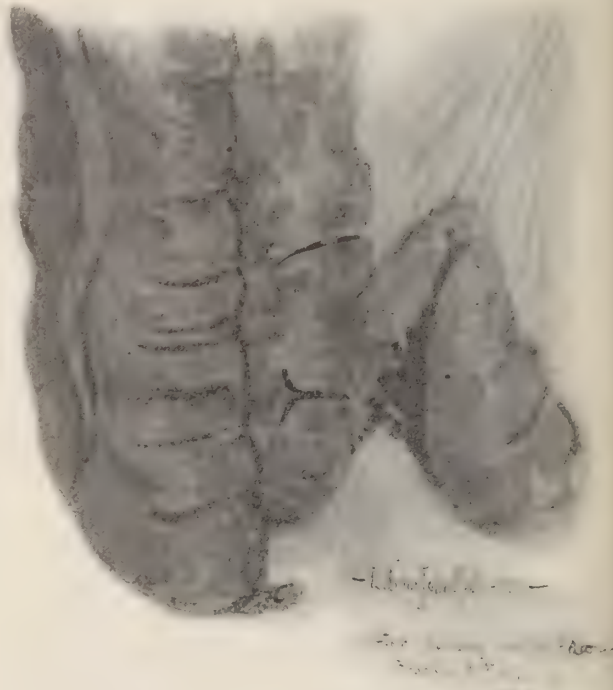


Figure 3. Another form of Lane Kink. Two arms of kink are bound together by adhesions, producing deformity and obstruction. From drawing by Franklin H. Martin.

upon for some other abdominal trouble, and from our own observation of its possibilities for harm, we have thought it wise to examine thoroughly the last six inches of the ileum whenever the abdomen was opened for chronic appendicitis. We believe it is a good policy to do this when the abdomen is open for any chronic trouble, provided the patient's condition will permit. At the present time the diagnosis is rarely made prior to operation, so it is highly important that the patient's history and symptoms be correlated with the operative findings in all cases where trouble is referred

to the right iliac region. The administration of bismuth emulsion followed by radiographs of the abdomen may show the obstruction, and the great advances in the accuracy and interpretation of X-ray plates makes this a valuable method of diagnosis in chronic abdominal conditions.

Surgical treatment of the kink itself is a very simple matter and adds practically nothing to the danger of any abdominal operation. These bands rarely contain blood vessels of any size, but when necessary they are ligated with fine cat-gut before being divided. It is best to remove the appendix and to examine the ascending colon for a membrane described by Jackson, which binds the colon to the abdominal wall and which causes kinking of this portion of the larger bowel. Following operations for appendicitis in which the ileum is handled, the patient will have more pain for a few days, but it gives him the only chance for permanent cure should a kink be present. They should receive a careful post-operative treatment planned to prevent auto-intoxication, increase fat, and build up the general health. Any therapeutic measure which contributes to these results, such as electricity, careful diet and massage should be adopted. A well-fitted abdominal binder applied in the Trendelenberg position will help to keep the cecum and other prolapsed organs in their proper places when there is enteroptosis. No attempt has been made in this paper to discuss the numerous kinks of other portions of the intestinal canal, which may be or may not be associated with Lane's kink in the ileum. This lesion is of unique importance and should be carefully studied.

Sufficient time has not elapsed since these cases were operated upon to enable us to speak definitely of the permanency of relief to these patients. They are reported primarily to call attention to the pathology of the condition and the importance of its recognition. Many of the problems of abdominal pathology remain unsolved and we must look to the investigation in physiologic chemistry and animal experimentation to furnish the knowledge necessary to enable us to deal intelligently with obscure gastro-intestinal conditions. As Finney has pointed out, some of these unsettled problems are bio-chemical rather than mechanical and their solution will, to a large extent, come from

the laboratory rather than the operating room.

Operative treatment for chronic appendicitis has not been altogether satisfactory. If the results are to be improved in these cases we must go farther and examine carefully for other pathological lesions. The time has passed when surgeons consider a short incision necessary in abdominal work and there is practically no danger in prolonging the operation sufficiently to allow complete investigation of all possible causes of the patient's sufferings. There can be no doubt that in a number of cases the chronic obstruction is more important clinically and pathologically than the non-adherent, slightly diseased appendix. We do not believe that every band or adhesion in the region of the cecum has a clinical significance, nor do we wish to magnify the importance of Mr. Lane's discovery. We do believe, however, that in many of the cases of so called chronic appendicitis characterized chiefly by right iliac pain, relief will be obtained only by the careful removal of any cause of chronic obstruction, and that the sequence of cure to operation will be established clearly and definitely in these cases where obstructing bands are removed, as in any other abdominal condition.

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CHRONIC INTERSTITIAL NEPHRITIS.*

By A. C. BILLER, M. D., Forestville, Va.

My reason for selecting this important disease for the subject of my paper is that, in the past three years, I have had a number of cases for diagnosis and treatment, causing me to study the subject thoroughly. I cannot hope to bring out anything original, but simply to impress some of the established facts concerning the disease, and to offer some conclusions, based upon study of the patient himself, as well as the knowledge derived from journals and recent text-books. I select this particular form of the disease, because I think it of greater importance to us generally than the other forms, and partly because I have had more experience with it.

The general symptoms so closely conform to those of simple indigestion and circulatory derangements that I will mainly try to discuss this phase of the subject. In doing so, I shall

*Read before the Shenandoah County Medical Society, at Woodstock, Va., June 28, 1911.

only attempt to give a synopsis of the important points of this form of chronic nephritis.

The best authorities all seem to agree that the disease may be either primary or secondary, with arteriosclerosis. The constant presence of toxins in the blood brings about a high blood-pressure, and other changes in the cardio-vascular system, causing arteriosclerosis. The cardio-vascular changes produce such general impaired metabolism that it is sometimes hard to decide what is really the primary change, and what demands treatment first.

The toxins which cause these metabolic irregularities, and finally nephritis, are principally derived from indigestion and faulty assimilation, thereby overworking the liver, whose function it is to destroy these poisons, and bringing about a final insufficiency of liver function.

The liver failing to destroy these poisons, the blood is constantly over-charged with them, producing high blood-pressure, and soon affects the most vital organs of the body, namely: the heart and blood vessels, the liver and the kidneys, as well as all other organs concerned in metabolism.

The three great causes which are mainly responsible for these irregularities are: First, over-work; second, over-eating; third, over-drinking.

There are other causes which are entirely independent of the above-mentioned, yet the same changes are necessary to produce the disease. Such causes are syphilis, lead-poisoning and heredity. The cause, heredity, is simply a predisposition which exists in some persons.

The latency of any distinctive symptoms, their close resemblance to those of indigestion, especially of the nervous variety, the usual absence of albumin, the increased quantity of urine and many of the other early symptoms, makes a diagnosis difficult; in fact, the physician is often not even suspicious of any serious illness from the clinical symptoms, allowing the patient to go on until the kidney involvement is so great as to cause convulsions, edema, or other grave signs of the later stages of the disease.

A very brief pathology will be helpful before considering the symptoms and physical signs of this disease. Both kidneys are contracted to a very marked degree, and frequently embedded in a thick layer of adipose tissue. The capsule is thick, opaque and very adherent,

causing portions of the cortex to adhere to the capsule when stripped off. The outer surface is red, irregularly granular or nodulated, and occasionally small cysts are seen with the naked eye. The tissue is firm, dense, and resistant to the knife. The cut surface shows a thin atrophied cortex, with dark reddish streaks alternating with pale postures.

There is a large quantity of new connective tissue taking the place of parenchymatous tissue in the kidney. This connective tissue generally destroys the tubules, but many are simply plugged by pressure, the urine being dammed in these, causing the cysts already mentioned.

There is always a more or less general arteriosclerosis, with hypertrophy of the left side of the heart.

The growth of fibrous tissue in the walls of the arteries, causing sclerosis, forms an important change, in most instances. This fibrous tissue, from constant irritation by the poison circulating in the blood, undergoes certain forms of degeneration, causing the arteries and capillaries to become occluded by endo-arteritis, or else is converted into connective tissue.

Cardiac hypertrophy is an almost constant attendant upon this form of the disease, the degree of hypertrophy depending upon the amount of sclerosis and kidney involvement, the left side only being involved in moderate cases.

Chronic interstitial nephritis is usually a disease of mature life, and sooner or later proves fatal, unless some intercurrent disease shortens the end. An early diagnosis may add many years to the life of the patient.

Symptoms.—Unfortunately the symptoms are not characteristic, and the disease is usually well advanced before a positive diagnosis is made. The patient in many cases has been treated for nervous indigestion, or some other form of indigestion, until dropsy appears from cardiac dilatation, causing a thorough investigation to be made.

Dimness of vision, increased pulse rate and tension, with accentuation of the aortic second sound, and the usual symptoms of stomach indigestion, should always suggest a repeated examination of the urine, and lead one to suspect chronic interstitial nephritis.

These symptoms, combined with loss of weight, nervous irritability, and frequent headaches, with a small amount of albumin found after repeated examinations of the urine, to-

gether with a few hyaline and granular casts, make the diagnosis practically certain.

Very frequently examination of the urine for albumin will prove negative, but the above symptoms and physical signs, with hyaline and granular casts, will usually be sufficient to make a diagnosis.

Some of the most common and early manifestations of the disease are stomach indigestion, nervous irritability, dimness of vision, frequent headaches, shortness of breath on exertion, and loss of weight. Any combination of these symptoms in a patient above fifty, would be suspicious.

There is always cardiac hypertrophy with increased arterial tension. The apex beat is found below and to the left of the normal point, with considerable, accentuation of the first sound. Frequently there is edema in the early stages, where the cellular tissue predominates, as under the eyes, etc.

In advanced cases, we usually have cardiovascular compensation failing, when the heart becomes weak, the pulse loses its tension and becomes rapid. As a result, we have edema, which is also partly due to the anemia usually present. Often the first indication of chronic nephritis is convulsions, or apoplexy, which may result in hemiplegia or sudden death.

The daily quantity of urine is increased and may amount to several quarts. Micturition is more frequent in day time, and at night the patient is compelled to get up two or three times to urinate. This may be aggravated by hyperacidity of the urine, and also by irritation of the prostate gland, especially in advanced years.

The urine is of a pale color, with a low specific gravity, usually not above 1010, and may be as low as 1002, except in the last stages, when quantity may be scanty and of high specific gravity.

Albumin occurs in traces only, and may be absent entirely, especially in the urine passed in the early morning.

There is very little urea, and little or no sediment.

A few granular and hyaline casts can usually be found, and sometimes a few red blood cells.

It is well to remember that a few granular and hyaline casts, with a small amount of albumin, does not alone signify nephritis, as both are often found in simple febrile affections, and

sometimes in entirely healthy persons. Therefore, in the early stages, physical signs are of more importance than either the urinary findings or the symptoms, or both combined.

While a diagnosis cannot be made on casts alone, they constitute a corroborative sign of high clinical value, when associated with other indications.

Treatment.—Certainly after a careful study of the primary causes of chronic interstitial nephritis, a strict hygienic and dietetic regimen, following an early diagnosis, will, to a considerable degree, prevent the advance of the cirrhotic process.

The poisonous material in the blood must be removed as completely as possible, and its reformation prevented by a proper regulation of diet with attention to the functions of digestion and assimilation.

The hygienic treatment embraces a regulation of all the habits of the body, and the mode of living.

The malady is incurable; therefore, the patient himself must be treated, and not the malady, never losing sight of the morbid process affecting so many organs, of which nephritis is only a part.

Special organs may, and likely will demand special treatment at different periods of the disease, such as the digestive system, heart, liver; the anemia must also be accounted for.

A suitable diet must be formulated for each individual patient. Laudley's rule is a good guide as to meats and alcoholic beverages: "Eat sparingly of butcher's meats; avoid malt liquors, spirits, and strong wines."

A light nourishing diet is therefore advisable. A mixed diet is demanded in all cases where the general nutrition is so greatly interfered with as in this disease.

An absolute milk diet *may* be demanded for a short period of gastric irritability, but undue weakness will be the result of a continued restriction to a milk diet alone.

It is best to tell the patient frankly his condition, so that he may more fully appreciate your efforts along hygienic and dietetic lines, thereby greatly assisting in bringing about his own comfort and avoiding the immediate dangers of negligence in so grave a disease.

Anything entering into the etiology of the case in hand should be avoided. Avoid over-amounts of water, especially where arterial

tension is high. Emotional excitement and excessive mental activity of any kind should be strictly avoided. Never exercise to the extent of fatigue. Clothing should be worn which is suitable to the climatic changes.

Especial care should be taken not to use drugs unless they are clearly indicated. To assist nature by maintaining cardio-vascular equilibrium, and protecting the kidneys from any irritation, and to relieve them of as much work as possible, is our principle of treatment.

Remember that the skin and bowels are the main dependence for the elimination of noxious substances that the kidneys are incapable of eliminating.

A simple regulation of the diet will often control a high blood-pressure sufficiently, when combined with a saline purgative or a dose of calomel. Purgatives are more or less necessary throughout the disease. A saline purgative every other morning, and a dose of calomel every week or ten days, is usually sufficient.

This treatment is useful both to sweep out the poison from the intestinal tract, and to produce a free flow of bile into the intestines, acting as an antiseptic, and also stimulating liver action.

When drugs must be used to dilate the blood-vessels, to relieve blood pressure, nitroglycerine seems to be the favorite in doses of 1-100 to 1-50 grain. Its effects are transitory, but for quick relief it has no equal. Drugs of more lasting power are to be preferred where prolonged medication is demanded, and veratrum, potassium nitrate and aconite are valuable where the heart is strong.

The anemia usually demands some treatment later in the disease, and iron in the form of the tincture of the chloride seems to be borne better than any other form. It causes less headache, less constipation, and interferes less with the blood pressure than other forms of iron.

Keep the urine as nearly neutral as possible.

Digitalis is imperatively demanded when compensation by the cardio-vascular system begins to fail. Nothing will take the place of the infusion of digitalis, guarded by nitroglycerine when actual cardiac-dilatation is manifest.

When true dilatation is present, we have the additional symptom of edema to treat. Give a liberal diet of proteid foods, rest in bed, digitalis, purgatives, and irrigation of the colon

with normal salt solution as hot as can be borne.

When convulsions occur, combat with the usual drugs until all the eliminative organs can be made to act vigorously by sweating and purgation.

In summarizing, I wish to repeat, for emphasis, some of the things already mentioned in this paper, and to say that chronic interstitial nephritis is a disease secondary to a train of morbid changes, brought about by toxins in the blood, the source of which is almost invariably that of improper digestion and assimilation. This is due to over-work, over-eating and over-drinking, the primary condition, in my opinion, being that of stomach indigestion.

Chronic interstitial nephritis is an incurable disease, but at the same time, it is a preventable one if those cases presenting the symptoms of toxic poisoning, especially from improper digestion and assimilation, are carefully investigated, and rationally treated in their incipency.

In my opinion, it is wrong to say that many of these cases are not seen until the disease is far advanced. The truth is that they were seen, but not diagnosed, having probably been treated for nervous indigestion.

THE DEPENDENCE OF CERTAIN MORBIDITIES UPON MORPHOLOGY.*

By FRANK H. HANCOCK, M. D., Norfolk, Va.

De Giovanni has shown the necessity of taking the natural sciences into fellowship with the science of medicine, if we are to solve many distressing problems that the other branches of medicine have failed to do—bacteriology, hygiene, cellular pathology, methods of physical examination, blood analyses, etc.

He insists that we must bring to our aid the vast science of zoology, that we must study the human group in its relations with the rest of organized nature. He sets out to prove, and does prove, that otherwise we cannot understand diseased man; the words constitution, temperament, predisposition, individuality, expressing more the unknown than the known. They must remain vain expressions, if we do not use the facts of zoology, which are at hand. We must agree with him, I think, that all medical students have been taught too little of biological law. De Giovanni was inspired to this work

*Read before the Section on Practice of Medicine, Norfolk County Medical Society, June meeting, 1911.

by the philosopher, Lamarck, and the Italian anatomist, Panizza.

The theory and the facts of descent, the law of adaptation, of atavism, and the natural history of creation, have furnished this internist with the material he skillfully uses in the remarkable work recently published upon Human Morphology. The saying of Lamarck that "every individual after birth finds himself in the midst of special circumstances which contribute to render him what he is in the different epochs of life," is the theme which is laboriously worked out by De Giovanni. In the study of the *individual*, to which he has devoted his life, he appears to have substituted many strange scholastic delusions with laws of positive observations, making clear allusions to laws of individual organization.

We have been content heretofore to study histology, physiology, nerve, muscle, bone and glands, and to make use of such knowledge, but we have not known how it was that from this fusion of such elements come individuals who, when compared with one another, present infinite physiological variations—those individualities possessing a particular constitution and temperament.

The classifications of constitutions and temperaments have heretofore been fictitious according to De Giovanni, and he proceeds to reclassify them, paying scant regard to traditional teaching, and probably giving rise to alarm in conservative minds.

The numberless peculiarities which individuals offer in the way of idiosyncrasies depends not upon conditions inherent in the chemistry of the organism, but upon the organization, and an anatomical distribution of the nervous system, through which healthy individuals are differentiated from one another.

It is due to the special condition of the nervous system that individuals feel and react differently to causes and stimuli which affect them, and this he calls nervous idiosyncrasy, dividing it into permanent and transitory. The former is connected with irremovable morbid conditions, and the latter with transient ones. Thus he explains the pathogenesis of the gouty diathesis, connecting it with the morphological conditions of the individual, and with their changes, depending on the mode of life.

The predisposition to phthisis may be shown irrefutably to be due to special morphology, and

De Giovanni cites instances of post mortems performed by himself and assistants where the heart in some cases was relatively small, and in others the pulmonary artery, as compared with the rest of the thoracic organs, predisposing to phthisis on account of inefficient circulation in the lungs. These points are not altogether new, but they are pressed with determination and persistence, and his use of the knowledge is a distinct addition to anything that has been said upon the subject before.

Now as to his laws: (1) That the cause of the special morbidity of organisms resides in their special morphology,—nothing finer than this has been said since Freud's pronouncement with reference to pathological psychology. (2) That the same principles which explain the formation of organs, of organisms, and their functions, explains the anomalies of form and function that the organisms present during the periods of life.

If special morphology of the organisms constitutes the basis of their special morbidity, then it happens that the same disease presents many nosological varieties, and he offers concretely alterations in the ascending vena cava, as a morphological condition or variation, responsible for abdominal scrofulosis. His naturalistic views are unquestionably new, and the long years he has given to their development entitle them at least to respectful consideration. That he is being treated with the silence, and with some of the contempt, that has been accorded other able men in the profession, is evident, as expressed in the following saying, "up to this time my writings have been held in little or no account." This reminds us of the treatment accorded Harvey, whose announcement of the circulation of blood was published in France, because of the ban placed upon the publication in England of such unorthodox matter; and of the treatment accorded Avenbrugger, whose precocity excited the jealousy of his contemporaries and jointly they decided to ignore him and his discovery of percussion. Tribute was paid to him when he had passed from this world. It appears not to be human for contemporaries to admit the greatness of their colleagues in medicine.

De Giovanni declares that *medicine as a branch of zoology appears in its true expression*, and that the factors of heredity, of adaptation, and of anatomical and physiological cor-

relations, which co-operate in the genesis of infirmities, will declare themselves more clearly.

The same disease in different patients presenting different clinical appearances, leads him to individualize the clinical fact, to search for the interpretation of individual clinical types, and this can be reached through morphology alone.

Haeckel expresses the law governing the development of the organs, and organisms as follows: Ontogeny (development of the individual), is a brief recapitulation of phylogeny (development of the species). What phylogeny accomplishes in the development of the individual applies equally to all organs, and the most complicated systems of organs, they having reached their final height in man through age, long processes of differentiation and specialization.

The vascular system in its primitive appearance was quite the same as the visceral cavity. It becomes transformed into the lacunar system of the annelida, and the lymphatic system of the vertebrates. Higher in the zoological series contracted hearts are added to the lymphatic system, higher still we come to the blood vessels, and heart, while the pulsating hearts losing their utility disappear from the lymphatics; with this division of work, the circulatory apparatus reaches its perfection. *The argument now is, that through phylogenetic tendencies, or atavism, through reversion to primitive homologues of the vascular apparatus, there may be varieties of formations, either excess or defect of development in some of the component parts; excesses and defects, which in man remain as atavistic traces, as morphological phenomena special to the lower animals that temporarily manifest themselves in the different phases of human development.*

In the first phase (Haeckel), the human embryo, is a simple plastic, which passes to the stage of cytode, or cell; in the second phase is a multi cellular animal, constituted of a large number of cells, not yet differentiated into germinative layers; he is an idorgan which becomes morula, and blastomere (the morula is the result of the process of segmentation of the ovum, a process identical in all animals, including man), in the third stage, man appears as an invertebrate, provided with an intestine, and passes through the stage of gastrula, whose organization is that of the worm, analogous to the larvae of the ascidians, and finally in the

fourth phase man is true vertebrate, but does not differ from reptiles or birds; he must pass to the acrania, thence to the craniota without a maxilla, to the ichthyoid stage, in which the human embryo has the organization of the fish, the members in the form of fins are rudimentary, the branchial clefts are open, and separated by the branchial arches, of which the first pair are differentiated into the upper and lower maxillae, and from the intestinal canal, the lungs and pancreas are derived; to the amniotic stage during which the embryo acquires the organization of the higher vertebrate animal.

If we have hearts, arteries, veins, lymphatics, connective tissues, we have on the other hand not the same parts equally developed; in all, these parts do not unite in the same proportions to form, for example, the liver, spleen, lungs and physical stature, and hence the morphological variant, with the consequences that are derived from it, according to the principle which says that function creates the organ, implicitly modifies it, consequently may create a special morbidity.

Upon this basis, therefore, of modern morphology, we may explain the origin of many diseases as being *within* rather than *without* the body. Physiology and pathology have never gone so far, the former contenting itself with function, and the latter, with tissue changes in disease, neither conceiving the real underlying morphological reason. *This is the conception that is the real medical reform.*

All that which in the individual, then, indicates a morphological discord, or an anomaly in the process of evolution is, or may be, the source of morbidity. In every epoch of life the principle is applicable *that the cause of special morbidity resides in the special morphology of the organism.* This is a premise sanctioned by modern science and is the clinical experience of De Giovanni.

Now, to understand the special individual organization is the task this writer sets himself to perform, and as every individual represents a morphological type, it becomes a vast and varied work.

If the cause of morbidity resides in the special organization of the body, it is necessary to know what that organization is, the quality of the ground on which the disease has originated and developed, and the wherefore of it.

It is not sufficient, for instance, to speak of

lobar pneumonia, in the first and second stage, without complications, but it is necessary to know everything in a patient which offers different morphological attributes; for example, the thorax in smaller or large proportions, or the heart in proportion more or less developed as a whole, or in one, rather than another part, etc.; because to these facts, apparently gross but very important, correspond special conditions of individual organization, of organic function, visceral resistance, and susceptibility, which constitute the special nature of the individual type, consequently the tendency to definite morbid manifestations.

When we announce the anatomical diagnosis of caseous broncho-alveolitis, one makes use of a generic expression, which becomes more concrete and special, if it can be associated with the fact of a disproportionate pulmonary artery in respect to that of the aorta, of irregularities of the peripheral circulation. *The diagnosis that does not refer to the individual in whom the disease occurs must always be incomplete, inaccurate, and misleading.*

We speak of constitutional syphilis, but we do not know why in one patient cutaneous manifestations prevail, in another osseous, in another hepatic, in another cerebral, in another syphilitic arteriosclerosis; we have only a repetition of coincidences, *without a scientific indication of the relations that exist between the tissues attacked and their morphology*; why the diplococcus of the saliva becomes the pneumococcus of pneumonia, or another time the meningococcus.

Different morphological and physical factors contribute to the different localizations of the infective fevers.

The relation of the patient to the mycoses accords with the morphological type of the individual.

Why the same cause should give rise to different morbid effects in the same organs, as pneumonia, with a large amount of exudate in one case and scarcely any in another, can be ascertained only from the general and particular morphological knowledge.

The history of therapeutics shows it to consist in great part of a few theories, many prejudices, and a great array of remedies.

One of the prejudices has always been this, that we have sought the cause of every malady outside the body. The domination of the germ

theory has helped to perpetuate this delusion, some have sought to protect health, only, when it was threatened, or lost, while the whole art of medicine must be preventive, and cannot be so, except through knowledge of the *individual*.

Morbid predispositions have scarcely been mentioned, and such knowledge as general pathology possessed has been little used, or insisted upon, or appreciated. The causes of disease *inherited in the organism* is the particular field of morphology, as outlined by De Giovanni, which would seem to be at least, of equal importance with the causes *outside of the body*, yet few clinicians have ever thought so. We are to be persuaded, doubtlessly, that very many infirmities arise independent of external causes, that these external causes frequently assist *but do not of themselves give rise to the disease*; thus the inutility of certain curative methods.

Preventive medicine cannot consider only *external* environments, it must concern itself likewise with the *internal*, must be based upon knowledge of morphology, of the laws of evolution of a body, in a given way, and upon pathology.

While the theory of evolution has penetrated into historical and social studies, and while anthropology is making progress, medicine up to this time has never received a single benefit, from the Darwinian discovery. Pulpits announce their conversion to evolution, but doctors are still willing to study the heart, as though it did actually begin with Adam. They saw the patulous, foramen ovale, but the real significance of this atavistic fact, occupied no part of their consciousness any more than the circulation of blood was within the mental range of the ancients, though they could see it flowing.

However, the transformation is being effected, and the knowledge will be utilized by those who succeed us. Comparative anatomy and embryology indicate a remarkable fact, namely, that birds are descended from reptiles, and that both are distinguished by the production of uric acid; when an excessive production of uric acid occurs therefore in man, we are confronted by a fact which appertains to the inferior organization, and which in man modifies the general constitution, assuming morbid appearances.

A rehabilitation of physiology is near at

hand, in which its study will be directed to arguments based on evolution.

Anybody who has listened to the Mayo lectures, or read the literature from that clinic, must have been impressed with the extended references to embryology and comparative anatomy made by them in their explanations of the origin of diseases; how they depend upon embryologic and phylogenetic states as reasons for perverted functions, and, finally, how they are never contented with the usual clinical considerations given to these subjects.

Dr. C. H. Mayo tells of a patulous duct sometimes seen in the human thyroid, which is really a phylogenetic remnant of the excretory duct, which still exists in certain invertebrata—the king crab, and sea scorpion—and how this turning back of an individual thyroid to a former state, this reversion to a primitive period, gives rise to morbidity. Likewise, the common origin of the liver, gall bladder, pancreas, stomach, and upper intestine, is an embryologic fact of the highest interest, according to McCarthy, in considering gall bladder affections, or affections of any of those parts, and that perversion may arise in one of them, and express itself in another, because of the kindred tissue from which they have jointly sprung.

Again, aberrant tumors of the thyroid are due, according to Dr. C. H. Mayo, to the fact that in making its descent the thyroid in early fetal life, often encounters the hyoid bone, with resulting suspension of thyroidal tissue and the ultimate formation of tumors.

Observation of the organism during its development will often discover its discords, disproportions, functional excesses, defects of parts, many of which may be corrected by proper exercises, habits, alimentation, on which the final beneficial transformation of the body depends. The physician should enter the schools and colleges, not to approve of absurd regulations and customs, which are precisely contrary to the requirements of growing youth, but to dictate rules for directing habits, for adjusting the physical and mental world, according to the requirements of each individual. He should be called to the gymnasiums and the play ground to specify the amount and kind of exercise that is best for each.

In the schools, by means of observation, he must find arguments for convincing teachers of the special susceptibilities of their pupils, with

the object of avoiding erroneous judgments, maternal punishments, causes of discomfort, sufferings, excessive work, which generally perturb the harmony of the organism. Preventive medicine consists, furthermore, in favoring nutrition of the spinal axis, of exercising especially one part or another, by suitable gymnastics, to distribute equally the energies; it consists in utilizing the general sensibilities, to influence indirectly the visceral vaso-motor functions through the intervention of the medulla spinalis; in developing the muscles of the limbs, or those of the trunk according to the scope; in encouraging the enlargement of the thorax, the nutrition of the left ventricle, or the whole heart, while, with suitable regulations, controlling the digestion and secretions. Thus will one gradually arrive at a relative transformation of the organism, and also at modifying the movement of organic materials.

Examine a child to see if there is a phylogenetic note, if its intra-uterine evolution has reached the final phase normally. If there was an error, the morbid effect may be lessened by corrective measures.

SOME IMPERATIVE PROBLEMS OF MEDICINE.*

By JAMES KRAUSS, M. D., Boston, Mass.
Permanent Secretary American Association of Clinical Research.

In a public lecture of an educational tendency, such as our Association requires us to give once a year, it may not be too paradoxical to say that of all imperative problems of medicine the first problem is to ascertain what medicine really is.

Last year, we showed how medicine, for some time the instrument of superstition, of supernaturalism, of metaphysics, has, through observation, experiment and generalization, become a science. We showed how occurrences, ordinary facts, become the foundation for scientific facts; how general facts, generalizations from related facts, become scientific facts as they describe, explain and connect correctly actual occurrences.

Facts, occurrences, are barren, incomplete, of no consequence really, without the truth that is behind them, the truth that develops the relationship of facts, the principles which permit

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us to use the knowledge of this relationship with precision in the every-day business of medical work. We must have facts, for they are the materials with which we are dealing, but we must have much more than facts, we must have the moving ideas, the principles, the truths that are behind the medical facts, and it is these ideas, these truths behind our medical facts, that really constitute the imperative problems of medicine of the present day.

History gives us the perspective. For centuries, when active treatment of patients was instituted—and when was it not?—the treatment followed was on this line: Here is the body of a patient, a structure admitting of a more or less mechanical or chemical consideration. To affect such a massive structure in disease, substances in quantities sufficiently massive to make a mechanical or chemical impression must be used. Then came the year 1799. In that year, for the first time in the history of medicine, we meet with the small dose. The small dose was introduced by Hahnemann.

It appears that one problem of medicine is very nearly settled: the necessity of the small dose. The small dose has come to stay. The argument has been made repeatedly that if patients can get well with small doses of drugs, patients can get well without drugs. A whole school of therapeutic nihilism has risen, disappeared, and risen again upon this argument. It is not necessary to mention religious healers who have attempted to cure people on the assumption that they require nothing, as disease is immaterial, health is immaterial, only tribute is material. Even medical men have tried to set aside symptoms by suggestion and analysis, but those of us who are in active practice have found repeatedly that when the patients are not overwhelmed by authority or a momentary subjective inclination to fall in with the suggestion and direction of the physician, symptoms that are true symptoms naturally remain. Actual disease requires actual treatment. There can be no question as to that. What it does not require is over-treatment, massive dosing.

The small dose has become justified through pathology, through physics, through chemistry, through biology. To-day we know definitely that the body is made up of millions and millions of cells of the smallest dimensions, microscopic and ultramicroscopic bodies. In diseases, it is these minute cells, and not Alpine struc-

tures, that are affected. We also know that nature works only with the smallest mathematical magnitudes. It has been calculated on the principles laid down by D'Alembert, Maupertuis, Euler, and other mathematical physicists, that one milligram (0.001) of mass, that is, about one fifteen-thousandth (1-15,000) part of a grain in weight, represents about sixteen million, million, millions (16,000,000,000,000,000) of molecules. The diameter of a single molecule is four ten-millionth (4-10,000,000) parts of a millimeter, or one ninety-eight thousand, four hundred and twenty-five millionth (1-98,425,000,000) part of an inch. These dimensions relate only to molecules, physical units, not to atoms, which are chemical units and which upon combination go to form physical units. Drugs penetrate the body not in mass, but through molecular, atomic, ionic dissociation. Van't Hoff, the great creator of chemistry in space, has proved that salts in dilution obey the laws not of solids, but of gases, that salts in solution do not have their molecules intact, but are broken up into ions bearing electric charges. One gram (1.0) of salt, or about fifteen (15) grains, dissolved in fifteen hundred (1,500) tons or over fifty million (50,000,000) ounces of water, can be made to carry an electric charge. It has been calculated (Francis, "The Electron Theory") that the repellent force of the electrons within the atom is a trillion trillion times greater than gravitational attraction. The physical and chemical properties of solutions of salts depend to a large degree on the activities of electrons, electrically charged ions. The energy inherent in ions is almost beyond belief. If we take three one-thousandth part of a gram (0.003) of polonium, the element discovered by Madame Curie, and spread it out along a strip of copper one centimeter (1 cm.) wide and as long as the equator, that is, about twenty-five thousand (25,000) miles, three centimeters (3 cm.), or a little over an inch of this elongated and attenuated strip of polonium would suffice to discharge the electroscope, an instrument indicating electric influences. Pasteur and Wright proved that minute rather than massive doses of vaccine must be employed for the best results. The division of drugs into their molecular, atomic or ionic constituents facilitates their reception by the cells of the diseased organism.

This brings us to another problem of medicine. Is there really such a thing as cure, or is it merely a sort of immunity that medicine may produce? Pasteur laid the foundation for what has come to be known through the further labors of Koch and Wright and many others as bacterial therapeutics. Bacteria and their products have been utilized in the treatment of infectious diseases upon the basis of what some have been pleased to call the law of immunity. What is immunity? Immunity is the physical ability to resist disease. What is the law of immunity? It is the assumption that patients get well without any treatment from outside, that the organism assailed by infection creates within itself new products for the warding off, the neutralization and the destruction of assailing infectious material, and that thereupon the organism retains a certain degree of resistance to such further infection.

Pasteur thought that during the multiplication of offending microbes in the body they exhausted some substance necessary for their maintenance and then ceased to grow and the individual recovered with consequent immunity. Metchnikoff (1883) disclosed the power of the white blood corpuscle, primarily the small polynuclear variety and secondarily the large mononuclear variety, to grasp, swallow, digest, and gradually absorb offending bacteria (phagocytosis). Some bacteria cause disease by multiplication and progressive invasion. Other bacteria cause disease by elaborating specific soluble poisons, toxins. These toxins when thrown into the circulation give rise to specific bodies, the antitoxins of Behring (1892), which are specifically antagonistic to toxins and which neutralize the toxins, according to Ehrlich, through chemical union, just as an acid neutralizes an alkali. When bacteria reach the circulation, they are acted upon by constituents of the normal blood, the normal alexin of Buchner (1889), or bacteriolysin of Pfeiffer (1894), or complement of Ehrlich (1899), and by specific substances which form in the blood only in response to specific bacteria, the bacteriolysins of Pfeiffer which dissolve, the agglutinins of Gruber and Durham (1896) which coagulate or clump, the precipitins of Kraus (1897), which precipitate the bacteria, and the opsonins of Wright and Douglas (1904), which prepare the bacteria for readier digestion by the white blood corpuscles.

In the disposal or breaking up of the bacteria, their intra-cellular toxin or endotoxin may come into action, and as this toxin does not give rise to the formation of antitoxins, there may be an aftermath of intoxication which may be taken care of by the normal alexin of the blood.

It is the old, old story that nature, the *phusis* of Hippocrates, the *vis medicatrix naturae* of the Latinized minds of the profession, the biological make-up of the human organism, is self-sufficient. It is the old, old error which sooner or later, consciously or unconsciously, every physician recognizes. Behring found that natural antitoxin was not always sufficient to neutralize the toxins of bacteria. He therefore produced animal antitoxin, to be injected into human individuals when they are short of antitoxin. This is the principle of serum therapeutics. Pasteur, Koch, Wright found that the white blood corpuscles of the diseased organism were naturally not always sufficient to dispose of the offending bacteria, so Pasteur took the living virus, the secretion, and old cultures of bacteria, Koch took the toxins of pure bacterial cultures, attenuated them and injected them into human individuals, as Wright puts it, to stimulate them to a greater production of defensive agents. This is the principle of vaccine therapeutics. Ehrlich found that drugs introduced into the circulation create their antibodies as bacterial toxins create their antitoxins, that repeated dosage produces immunity by direct, specific action on the parasites (parasitotropic) or on the body cells (organotropic). There is a specific chemical affinity between specific living cells and specific chemical substances. A parasite-destroying drug will kill either all the parasites with one stroke or will kill only a certain number of parasites and the remaining ones will be destroyed by the rapidly forming antibodies in the blood. This is the principle of Ehrlich's chemical therapeutics.

Of course, we have to assume if we wish to conclude. But because we conclude it is not proved that what we assume is true. What we assume is either demonstrable or not demonstrable. If demonstrable we must demonstrate that it is true. If not demonstrable, the results must speak for our assumptions. If the results are all that they should be, the assumption is correct. If the results are not all

that they should be, the assumption may still be correct as far as it goes, but is not comprehensive enough, is wanting in its terms and implications, or the assumption is faulty throughout. The difference between a mere assumption and a real theory is this: A theory is, if not proved, at least provable. A theory is comprehensive in its terms and implications. A theory is true in its results.

What are the results? It appears that many patients fail to generate sufficient antibodies, fail to produce a sufficiency of defensive agents, for all patients treated with antitoxin or vaccine do not get well. The far-reaching claims of therapeutic benefit for serum and vaccine immunization are not borne out by clinical observation. Instead of immunity there often occurs hypersusceptibility. Instead of a cure there are relapses. There is at best an armed peace between infection and defense, ready to be broken at the first opportunity. When patients recover, they are not as they used to be before they were attacked.

The reason is not far to seek. It is impossible to introduce any substance into the body, be it food, drug, serum or vaccine, without alteration in the process of incorporation. Whether we assimilate or eliminate the substance incorporated, there is alteration of body and substance. Food that goes to make up the wear and tear of flesh and bone, protein, is stored up in early life, but in adult life the excess is eliminated, partially oxidized, by way of the kidneys. Fatty and starchy foods that go to make heat may be stored in excess as fat at all times, and need not be promptly eliminated through the lungs, the skin and the kidneys. Just as nutritious substances become incorporated, just as they enter into combination with cell protoplasm, so do offending substances. It can be nothing but pure assumption to say that certain substances will attack therapeutically only bacterial cells and other substances will attack only cells of the body proper. It is pure assumption to say that the reactive products of infection confine themselves to their specific cause. Roux showed that tetanus serum is antitoxic not only to tetanus toxin, but also to snake venom. Snake venom is active also against scorpion poison. Yeast cells increase phagocytosis for yeast cells and opsonic activity toward staphylococci (McFarland, L'Engle, etc.) Animals immunized with egg albumin

of the chick yield precipitins for the egg albumin of related birds (Coplin). It is a mere assumption to say that the power of immunity will stop with resistance to bacteria and their products, and will replace only those tissues and fluids that are cast off in the process of immunity. The regenerative process tends to overproduction. According to Weigert, among the latest observers, and according to the best observers of all times, the tendency of the natural process of repair is to exceed the absolute requirements. The *vis medicatrix naturae* works blindly.

The vital problem of medicine is the cure of patients. There are not only infectious diseases, which have been treated on the basis of the so-called law of immunity, but there are other diseases—developmental, nutritional, traumatic—which require treatment, some adjustive treatment, some curative treatment. In adjustive treatment we aim at a mechanical effect. We adjust the human mechanism in certain of its parts, physical, chemical, psychical, according to physiological tenets and requirements, and let the disordered organism put itself in order. In curative treatment we aim at a substitutive effect, a dynamic effect. We introduce into the body a new, extraneous energy; we substitute the more or less transient energy of the remedy for the more or less permanent activity of the disease energy; we cure what the native power of the organism alone cannot cure.

It is necessary, therefore, that we know with exactness the power of action that rests in our tools, in our remedies. Just as we palpate, inspect, auscult, percuss the body to detect and weigh symptoms of disease, disease effects, just so we ought to palpate, inspect, auscult, percuss the body to detect and to weigh, by the symptoms that drugs produce, drug effects. We cannot tell what there is in a drug from its physical qualities (Galen), from its resemblances to certain parts of the body (Paracelsus), from its sensory attributes, or even its chemical constitution. The only way we can learn what there is in a drug is by studying its effect on the organism. For centuries drugs were given to the sick, and effects on the sick were taken to be drug effects, and on that basis drugs were continued to be used on the sick. This *post hoc ergo propter hoc* medication is the principle of empirical medicine. On the other hand, Haller (1771) suggested that if we wish to know the

action of drugs, these drugs should first be tested on the healthy human body. The first complete test of a drug in the healthy human body was made by Hahnemann on himself during the years 1789 and 1790. There were those that followed him, and those, like the school of Schmiedeberg, that preferred to learn the drug effects from tests on animals rather than on healthy human beings. From the ascertained action of drugs on the healthy organism, animal or human or both, it is determined how drugs will act upon sick persons, and on that determination the drugs are used on sick persons. This is the principle of rational medicine.

The testing of drugs on the healthy human organism was the means of bringing forth what I conceive to be the most far-reaching discovery in medicine: a drug produces in the healthy human body not merely one symptom, but a series of symptoms, subjective and objective, corresponding to entire disease pictures. We can diagnose drug remedies as we can diagnose diseases, by their manifestations in the human body. The physician who allows himself to forego the knowledge of this fact lives in assumptions and practices on hypothetical indications.

In a science like medicine, which deals with the complexities of structure and function comprised in human life, constant assumptions lead only to uncertainties. Yet nowhere is certainty so much to be desired as in medicine. Medicine is deluged with unorganized material. Because we have thousands of years of medical practice behind us, it does not mean that our records represent the value of as many years of scientific progress. Because men devote time and effort and money on research work in medicine, it does not follow that that work is good, and in the direction of medical certainty. The world is flooded with bad research work. Millions and millions of money are spent for research work that is not research work. Medically, most of the work goes beside the point. The money, often the offered balm for forgotten sins, might just as well remain in the hands of the sinners. Numbers do not necessarily give exactness. Experiments are at best factitious. "Facts are stupid things," said Agassiz, "unless brought into connection by some general law." This, as we have shown, cannot be done by assumptions that defy proof.

But what assumptions cannot do, a correct method of procedure that requires no assumption can do.

The American Association of Clinical Research is in possession of such a method. The method is known as the conjoined clinical method of research. It forestalls errors of observation and experiment to be corrected by later observations and experiments. The method corrects observational and experimental error by simultaneous observation and experimentation. It admits of no preconceived notion. What it requires is only unquestionable facts. It does not require details to be garnered by centuries. The facts of the immediate present are enough. It takes primarily nature's experiments as a whole, through the process of observation, and secondarily man's experiments as factitious combinations of circumstances made to reproduce nature's facts, through the process of experimental observation, but does not accept a part for the whole nor factitiousness for naturalness. Statistical tabulation presupposes uniformity of clinical conditions, but such uniformity does not exist. Tabular statements cannot give the essentials, the minutiae, the differences which are necessary for adequate, precise, comprehensive, complete conclusions. Experiments cannot always reproduce all the circumstances under which observations are made, cannot reproduce the clinical continuity, and even when applied to a stationary phase, are not necessarily correct, exact or valid. But it is different when we proceed upon the method of conjoined observation and experiment. We can consider the human element throughout its continuity, in all its minutiae and differences. We can verify one observation by another observation, the corrective or control observation taking place at the time of the original observation.

There is no physical hindrance to this method. We have now microscopes where two observers can observe the same object at the same time. Astute men already advocate this method for teaching purposes. If good for teaching and study, the method is good for investigation, for research. The method is so simple that, perhaps, the greatest objection to it, if such an objection could sanely be made, would be its simplicity.

The method is as follows: Two men make and record their observations simultaneously

and independently on the same patients. One man applies the treatment in one case; the other man applies the treatment in the other case; but both men observe and record throughout, independently, though simultaneously, what is done and what the results may be in every case.

Thus we obtain unquestionable facts. The Association has issued research leaflets which give in concise form directions for the natural observation of clinical phenomena in the all-inclusive sense of disease phenomena. The observation may be carried on in the smallest as well as the largest hospitals, and even in private practice where two men work together. As soon as the Association will have its own hospital—and it will not be many years before it will have its own—there will be a home for conjoined clinical research work, for the conjoined observation and collection of clinical experiences, and it will make the beginning of the end for much of the worthless, foolish research work now going on, worthless and foolish because it lacks correct methods of attack.

The problems of medicine require observers for the collection of facts; interpreters for the interpretation, analysis and classification of facts; theorists for the correlation of facts and deduction of their underlying principles; and organizations for the dissemination of facts and principles proved true.

The American Association of Clinical Research is the only organization in existence which has set its object on the systematic, scientific investigation of the science and art of medicine, the systematization of medical experiences for the purpose, first, of ascertaining what is true in the present practice of medicine and surgery, and, secondly, of advancing the scientific practice of medicine and surgery on the basis of truth and not of whim.

Stevenson asks, in his "*Virginibus Puerisque*," "How would you have people agree when one is deaf and the other blind?" I say, by making them feel.

No one who is sane can deny facts. The American Association of Clinical Research accepts records from whatever source, provided no question can be raised that they represent actual clinical phenomena and contain the original data. The data are examined, analyzed, correlated, and the facts and the principles deduced from them are disseminated, irrespective

of whether they strike the deaf or excite the blind, for the aim is to stop the greatest scandal of the medical ages, the chaos and inertia of mere empiricism, and to place in its stead the fertile principles of rational, scientific medicine.

419 *Boylston Street.*

Analyses, Selections, Etc.

The "Scrofulous" State.

Although the term, *scrofula*, is rarely met nowadays in American medical literature, it is still frequently encountered in the writings of European authors. Like Banquo's ghost, it will not down. However much, from a pathological standpoint, we may be inclined to regard the so-called scrofulous manifestations as identical with tuberculosis, there is a clinical difference which, to some minds, is sufficiently marked to justify a distinction.

Scrofulous children, in many instances, escape serious tubercular involvement in after life, even though their tissues may be more susceptible to the onslaught of the tubercle bacillus than those of healthy individuals. The older writers present graphic pictures of what they termed the scrofulous diathesis, which was held responsible for a host of clinical manifestations. As depicted by them, such children were prone to suffer particularly from inflammations of the mucous membranes, skin and lymphatic glands. The older authors possessed a power of description, which, however faulty it may be in the light of present pathological teachings, leaves an impression which is not soon forgotten. The scrofulous child, as described by them, frequently suffers from attacks of conjunctivitis, not readily amenable to treatment and apt to develop into a chronic state with red and granular eyelids. They were liable also to nasal catarrhs of an obstinate character. Their skin and scalp were often the seat of rebellious eczemas with purulent exudates and crusts. Associated with these conditions there was often present enlargement of the lymphatic glands, particularly of the neck, with a tendency to breaking down and the formation of disfiguring scars. These little patients were thought to be especially liable to derangements of the digestive organs, to diarrheas, and imperfect assimilation, leading to marasmus or faulty physical development.

We of the present day may smile at what we consider the vagaries, based upon ignorance, of these old time clinicians. We may say, and with justice, that owing to their lack of knowledge of modern pathology, they were greatly handicapped in interpreting the phenomena they encountered and assigning them to their actual causes. The question may well be asked, however, whether in this bacteriological era, we are not attributing too much significance to the germ and too little to the soil which is necessary for their development. Might it not be advantageous to retain the designation, scrofula, and apply it to those individuals who manifest a lowered vital resistance of their tissues, a special vulnerability, so to speak, which renders them particularly susceptible to bacterial invasion and tuberculous processes? A child having this tendency will react differently to an irritation or trauma than will a healthy one, this being due to the lower degree of vitality of its tissues. A slight blow or fall upon an exposed joint is often sufficient to set up an inflammatory reaction which is slow in subsiding or may develop into a tuberculous arthritis. An irritation of the mucous membrane of the eye may lead to an obstinate form of conjunctivitis; a cold to a protracted and offensive nasal catarrh; an irritation of the skin to intractable eczematous eruptions; and so on.

Nothing that is said herein is intended to convey the idea that scrofula should serve as a cloak for diagnostic ignorance or inaccuracy. It would be ridiculous for any one to make such a diagnosis without a thorough examination to eliminate every other possible cause. But after all is said and done, it still seems to us that there is a certain well-defined class of cases to which the old clinical designation of scrofula may well be applied, even though we may be able to only dimly fathom its true nature.—(*Editorial American Medicine, October, 1911.*)

A New Conception of Immunity.

C. C. Bass, New Orleans, says that when a foreign protoplasmic substance, protozoal or bacterial, is introduced into the tissues of man, specific amboceptors develop and may be demonstrated in the body fluids, especially in the blood-serum. These amboceptors are capable of dissolving large quantities of the same kind

of protoplasm in the presence of sufficient complement, but are inactive in the absence of complement. Amboceptors are not destroyed by moderate heat (56 degrees C.) or by considerable age.

Complement acts with specific amboceptors to dissolve and destroy large quantities of protoplasm in the presence of specific amboceptors against the particular protoplasm, but it is inactive in the presence of such amboceptors. Human complement capable of acting with human amboceptor to produce lysis, though generally supposed to require at least moderate heat to inactivate or destroy it, as a matter of fact is destroyed by any temperature above normal body temperature (37 C.) and with a rapidity depending on the temperature. A temperature at 40 C. (104 F.) destroys the complement in human serum in from fifteen to thirty minutes; and prevents lysis, regardless of the amount of amboceptor employed.

Freshly drawn human blood contains little or no complement capable of acting with human amboceptors, but under favorable conditions it develops at a variable rate and in varying quantities, depending especially on the temperature at which the blood is kept. The most favorable temperature is considerably below body temperature. No human specific complement develops at ordinary fever heat, 38 to 40 C. (101 to 104 F.), such as obtains locally and often generally in most inflammations. Bacteriolysis or protozoalysis, by far the most important of the known protective processes of the body fluids of man through which the specific infecting organism should be destroyed, is thus prevented by the local or general temperature, regardless of the amount of amboceptor present.

In the event that human complement has developed in a blood (which it does under favorable conditions within a few hours) it increases in amount for a time. Then it again disappears in from thirty to seventy-two hours, according to various conditions.

When an individual is infected with the malarial plasmodium, *spirochaeta pallida*, the bacillus of typhoid, etc., his blood soon contains large amounts of amboceptor against the infecting organism. If such blood is drawn and employed as a blood-culture in the usual manner and at a temperature at or below 37 C., complement develops within a few hours, and acting with the specific amboceptor, destroys

the organism and prevents successful cultivation. This is the explanation for the many negative typhoid blood-cultures in the latter part of the disease when much amboceptor is present, while cultures in the first few days are generally successful. This may be obviated to some extent by employing special media like bile, which prevents the development of complement. The same result can be obtained by placing the culture immediately at a temperature that will prevent the formation of complement and yet not high enough to destroy the organism. Theoretically and practically, so far as my experiments indicate, blood-cultures will be positive at any time when the organism is present in the blood.

Applying the principles set forth above, the author has been able to keep alive and to cultivate without difficulty the three common forms of malarial plasmodia—*plasmodium malariae*, *plasmodium vivax* and *plasmodium falciparum*. They have been repeatedly transplanted successfully. Up to the time of writing, cultures have lived in citrated blood for over two weeks, and they have been confirmed by a number of confreres.

It is the opinion of the writer that the other blood-inhabiting protozoa and bacteria may be grown without difficulty, provided these principles are followed and appropriate technic is employed. In the case of malarial plasmodia a special technic, apparently necessary, is that strict anaerobic conditions must be maintained throughout. This, however, is no doubt essential for the satisfactory cultivation of most pathogenic bacteria. Citrated or defibrinated blood is the most successful medium the writer has found for the cultivation of malarial parasites.

Applying this theory to therapeutic measures, we have reversed conditions, and then we desire to favor the formation and activity of the complement. We may take as a favorable illustration an ordinary infected abscess. As a result of the bacterial toxin, inflammation ensues with its accompanying hyperemia and swelling due to exudation of serum and, usually, leukocytes. The latter engulf the bacteria, but are unable to destroy them for lack of complement, which cannot develop because of the local elevation of temperature.

Finally, sufficient necrosis occurs to give rise to macroscopic cavity filled with pus. This may

continue to increase in amount and the bacteria live and multiply in it. If such pus is withdrawn and some normal serum rich in complement is added, it promptly becomes sterile, provided the matter is in sufficiently fine division so that the complement supplied and amboceptor already present in the pus can reach all the bacteria present. If the pus contains some serum that has recently exuded from the tissues, and if it be placed at proper temperature, complement develops and can be demonstrated by appropriate test. If, on the other hand, the pus has been in the cavity many days and at high temperature, it will have passed the age at which it can develop complement under any condition. If such old pus is withdrawn and the cavity allowed to refill with new pus fresh from the living tissues, and provided the temperature is kept below the inactivating temperature for human complement, then large amounts of complement develop and the bacteria are destroyed by the combined action of amboceptor and complement. Such new pus withdrawn and kept at appropriate temperature develops an enormous amount of complement—in fact, much more than would an equal amount of blood—probably because of the increased number of leukocytes, the probable source of the complement.

It should be stated here that complement will develop at quite low temperatures, but that the activity of human amboceptor and complement is much reduced at a temperature of 23 C. (73 F.) or less. Thus, the very process it is desired to favor may be materially interfered with by too much cold.

We seem to have herein an explanation for the good derived from cold applications to inflammations, even to the effect of high and incidentally cool climates in tuberculosis of the lungs. The temperature of the diseased foci is lowered by the constant inhalation of cold air.

The possibilities along the lines suggested are so great, and the work necessary for the evolution of technic adapted to each of the many problems, both cultural and therapeutic, that will be suggested from time to time and in which this theory plays a part, so extensive, that one worker will be unable to do any considerable part, and the author, therefore, hopes that others will take up this line of experimentation and confirm or contradict the opinions expressed.—*Journal American Medical Association*, November 4, 1911.

Book Notices.

The Practitioner's 1912 Visiting List. Wallet-shaped, bound in flexible leather, with flap, pocket, pencil with rubber, and calendar for two years. Philadelphia and New York. Lea and Febiger. Price postpaid, \$1.25. Thumb letter index, 25 cents extra.

This visiting list is issued in its usual forms, known as the Weekly, Monthly, 30- and 60-Patient Perpetual. The three former contain 32 pages of data and 160 pages of classified blanks; the latter, 256 pages of blanks alone. The text portion gives tables, antidotes for poisons, and much information in a condensed form, which will be found useful to the physician for ready reference without the time required to consult text-books. This data is thoroughly revised from year to year.

Editorial.

Needs of Tuberculosis Patients in Virginia.

The Virginia State Board of Health, from a lack of sufficient funds, recently decided that no patient could remain at Catawba Sanatorium for a period longer than six months if there were applicants for admission on the waiting list. Under such rule, a number of patients undergoing treatment are regularly forced to leave. The majority of these feel that a further stay at the Sanatorium would be of great benefit, especially so since there is no other institution in the State to which they can go, and but few have the proper facilities at home for continuing treatment.

After a conference with the officers at Catawba, and with the full support and endorsement of the State Health Department and the State Anti-tuberculosis Association, the Catawba Relief Association was formed by the patients of the Sanatorium, with Mr. A. W. Barron, secretary and treasurer. The purpose of such organization is to appeal to the people of the State for money to erect pavilions to be used exclusively by patients who have to leave the Sanatorium at the end of their six months' stay, but who are not entirely cured. That the cause is worthy and should have the material assistance—however small this may have to be—of those in a position to aid is but a plain duty that each one owes his fellow man.

It is estimated that there are 20,000 cases of tuberculosis in the State and at least 5,000 deaths from the disease each year. The Sana-

torium, in addition to its work in alleviating suffering, does much in the way of educating its patients in the laws of living, and they, in turn, when restored to health, return to their homes to assist in spreading the gospel of good health. The work of this Association would give the assurance of recovery to many who would otherwise have to endanger the good results accomplished from their stay at the Sanatorium. Could any cause be more worthy of support than one which has a two-fold purpose of such import not only to the sufferer, but to thousands of others as well?

The law limiting the stay of patients at the Sanatorium to six months was passed with a view to accomplishing the greatest good for the greatest number, and it was believed that patients who were not cured in that time, would at least be in a position to leave the Sanatorium and to follow intelligently the instructions which had been given them while there. But where is the home ready to receive those suffering with tuberculosis without the fear of having others infected? And so it was that these patients, rather than be a burden on others by causing this fear, organized themselves into an Association so it might be possible for them to remain where they might be the recipients of a continuance of the care and instruction until they can return to their homes cured.

Seven thousand dollars is the amount which has been asked for the necessary buildings. A portion of this amount has been promised conditionally upon the collection of a similar sum from individual donations. Much good has already been accomplished by the concerted work of health officials and the doctors of the State in reducing mortality from tuberculosis. Will you not let Mr. Barron know what you will do to assist the cause?

Vital Statistics for 1910.

A preliminary statement, based on advanced bulletins issued by the Census Bureau, shows that though several cities reported a decrease in the death rate per 1,000, Colorado is the only registration State reporting a decrease in the death rate.

It is believed that the higher death rate in a number of the Southern cities is due to the colored population, which has a higher mortality than the white. Judging by the improvement in the death rate in districts where

there is now a better registration of births, it is thought that the high rate of infantile mortality has, to an extent, been due to the previous non-registration of a number of births.

Reports of State Hospitals.

The annual reports of the Virginia State Epuleptic Colony and Central State Hospital, which have just been received, show that excellent work has been done at both institutions, and the boards highly endorse the efficient administration of the superintendents and their corps of assistants.

One hundred and twelve patients have been received at the Colony since its opening, on May 16, of this year. They have, except in a few instances, come from the various State Hospitals, having been selected in accordance with the number of male epileptics at each, and with regard to the benefit to accrue to the patient from the Colony life, and to their usefulness in helping to build and develop the institution. As there is only one building for patients, no women have as yet been admitted. The Board urges the necessity of the State providing accommodations to receive all epileptics from the State Hospitals. A larger number would reduce the per capita cost, by fully utilizing the force of officers and employers necessary for the institution in its present shape.

A building for the criminal insane was opened this fall at the Central State Hospital. As the money appropriated by the last General Assembly was insufficient to construct a building to care for sixty patients, according to plans adopted, it was decided to complete the center portion and only one wing at this time. This building furnishes accommodations for twenty-five patients.

The Medical Examining Board of Virginia

Will meet in Lynchburg, December 19-22, 1911, for the examination of applicants to practice medicine in this State. Dr. R. W. Martin, of Lynchburg, is president, and Dr. R. S. Martin, of Stuart, secretary, of the Board.

Dr. W. W. Chaffin, of Pulaski, has been appointed from the ninth congressional district, to fill the vacancy created by the resignation of Dr. E. T. Brady, the former examiner on surgery and gynecology.

The Southern Medical Association,

Which held its fifth annual meeting at Hat-

tiesburg, Miss., in November, under the presidency of Dr. Isadore Dyer, New Orleans, selected Jacksonville, Fla., for the next place of meeting, and elected the following officers: President, Dr. Jas. M. Jackson, Jr., Miami, Fla.; vice-presidents, Drs. Frank A. Jones, Memphis, Tenn., and Daniel J. Williams, Ellisville, Miss., and secretary-treasurer, Dr. Seale Harris (re-elected), Mobile, Ala.

The Virginia Health Department

In its October-November Bulletin, gives detailed information, illustrated by cuts, regarding the ventilation of rooms, and outlines the benefits derived from "fresh air" in the prevention and cure of disease. An extra large edition has been issued, and copies may be had by any one upon request.

Pine Camp,

The home for tuberculosis patients, located just outside of Richmond, Va., has just completed a most successful year's work. The new infirmary, for which Mr. J. G. Tinsley donated \$1,500, will soon be completed and Pine Camp will be able to care for a number of advanced cases of tuberculosis now scattered throughout the city. The camp is supported by the generosity of its friends and the city council.

Dr. W. B. Robinson,

Formerly of Tappahannock, Va., but more recently of Richmond, is much improved since recently undergoing an operation at Memorial Hospital.

Married—

Dr. Hugh Carter Henry, a member of the medical staff of the Central State Hospital, Petersburg, Va., and Miss Bessie McGehee, of Keysville, Va., on November 14th.

Obituary Record.

Dr. John Porter Davidson.

Again the profession of this city is called upon to mourn the loss of one of its talented and beloved members. Born in Rockbridge County, Va., March 10, 1869, Dr. Davidson died at his home in Richmond on the morning of November 28, after a lingering illness from heart disease. He received his academic education at the Virginia Polytechnic Institute,

later going to the University of Virginia, where he entered upon the study of medicine. Upon graduating in 1893, he became an interne at St. Vincent's Hospital, Norfolk. After several years elsewhere, he located in Richmond, and limited his practice to the eye, ear, nose and throat specialties, in which branch of medicine he was one of the acknowledged leaders of this section. He was elected Professor of Diseases of the Eye and Ear at the Medical College of Virginia, in 1898, and held this position to the time of his death.

Dr. Davidson was exceedingly popular, and will be missed by a large number of friends in the home of his adoption, as well as in the numerous local and national medical societies with which he was connected. His wife, who was Miss Florence Talbott of this city, and child survive him, as also a sister and several brothers, one of whom is Dr. Chas. H. Davidson, of this State.

Resolutions on Death of Dr. Davidson.

Whereas, having heard with profound sorrow of the death of Dr. JOHN P. DAVIDSON, the Richmond Academy of Medicine and Surgery desires to express its estimate of the sterling qualities of our departed colleague, its appreciation of his high professional ability and standing, and of the great loss which the profession sustained in his death.

Resolved, That the academy extends its sympathy to the bereaved family.

Resolved, That these resolutions be spread upon the minutes of the academy and that copies be sent to the family and to the daily papers.

The above resolutions were adopted at a meeting of the Richmond Academy of Medicine and Surgery held on the 28th inst.

At a meeting of the Faculty of the Medical College of Virginia, held November 29, 1911, on account of the death of Dr. John P. Davidson, a member of the faculty, the following action was taken:

Resolved, That in the death of Dr. JOHN P. DAVIDSON the Medical College of Virginia has sustained a grievous loss. He was eminent in his profession, brilliant as a teacher and beloved by his colleagues and pupils. The members of the faculty in this manner express their great appreciation of his worth and their profound sorrow at his death.

Surgeon-General Walter Wyman,

Of the United States Public Health and Marine Hospital Service, died at Providence Hospital, Washington, D. C., November 21, and was buried in St. Louis, Mo. He was born in St. Louis, August 17, 1848. After graduating from the St. Louis University and Amherst College, he studied medicine at the St. Louis Medical College, now the Medical Department of Washington University, from which he graduated in

1873. Dr. Wyman entered the Marine Hospital Service as assistant surgeon in 1876, and was appointed surgeon-general upon the expansion of this service into the United States Public Health and Marine Hospital Service, in 1902. His name will long be remembered for the great good he rendered this service in its various departments.

He was identified with a number of the leading medical associations, and had served as an officer in many. Perhaps his latest honor was his election as president of the American Medical Editors' Association, last June.

Dr. James Turner Clark,

Who was born in Waynesboro, Va., March 25, 1820, died at his home, Mt. Solon, Va., November 30. He studied medicine at Jefferson Medical College, Philadelphia, from which institution he graduated in 1857. At the beginning of the War between the States, he enlisted in the Confederate service, and at the Battle of Manassas, was detailed assistant surgeon, which position he held until the close of the war. He had been a practicing physician at Mt. Solon for over fifty years, up to a short time ago. He was a member of his county and State medical societies, having been elected an honorary member in the latter in 1906. Dr. Clark was twice married and is survived by two children.

Resolutions on the Death of Dr. Benjamin Brown.

The following resolution was passed by the Medical Society of Northern Virginia and the District of Columbia, November 15, 1911:

Whereas, Almighty God has seen fit to remove from our midst, Dr. Benjamin Brown, of Nokesville, Va., who died on November 14, 1911, after a few hours illness;

Resolved, That the members of the Medical Society of Northern Virginia and the District of Columbia, in session assembled, extend to his wife and family their sincere sympathy in their sudden bereavement, and that they further express their feelings in this removal of an honored gentleman, a skilful physician, and a valued member of this organization—cut down in early manhood, in the height of his usefulness, he is not only a serious loss to the people he so well served, but to the medical profession of the State.

Be it further *resolved*, That the action of the Society be spread upon its minutes and that a copy of these resolutions be sent to his wife.

STEPHEN HARNSBERGER,
C. S. WHITE,
S. W. MAPHS,

Committee.

A. G. COUMBE, *Secretary.*

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Original Communications.

HARE-LIP AND CLEFT PALATE.*

By J. SHELTON HORSLEY, M. D., Richmond, Va.
Professor of Principles of Surgery and Clinical Surgery,
Medical College of Virginia.

Operations upon hare-lip and cleft palate have not been so revolutionized by the methods of Lister as has been the case with most surgical operations. The problem in such instances is not one of strict asepsis, as the maintenance of sterile surroundings in the mouth is practically impossible, though, of course, these operations should be attended by all reasonable precautions in the matter of cleanliness and anti-



Fig. 1. H. B. Age, 17 years. Double hare-lip and cleft palate. This picture was taken the day before the operation.

sepsis. The healing depends more upon the care with which the flaps are selected and the dexterity with which the operation is performed than upon elaborate methods of sterilization. The correction of hare-lip unaccompanied by other deformity might be classed as a purely cosmetic operation, though in cosmetic operations on the face, correction of a deformity is a blessing to the neighborhood as well as to the patient.

*Read before the forty-second annual meeting of the Medical Society of Virginia, at Richmond, October 24-27, 1911.

In a bad hare-lip, however, when there is also a defect in the palate and alveolar process and, sometimes, a protruding premaxillary bone,

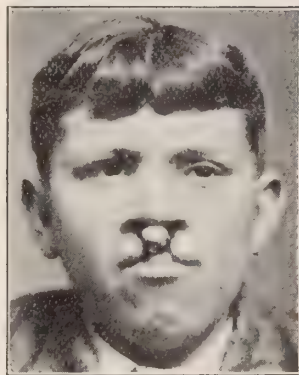


Fig. 2. H. B. Another view of patient shown in Fig. 1.

the conditions are quite different. We have to deal here not only with a cosmetic operation and the correction of a deformity, which is repulsive to sight, but with the correction of a voice which



Fig. 3. H. B. Twelve days after operation.

is disagreeable to hear; and, most important of all, with a condition that directly affects the health of the patient. It is notorious that babies and young children with bad hare-lips and cleft palates rarely attain maturity without a correction of the defect. The dangers they incur from direct inspiration of air through the

mouth and from the constant pollution of food with bacteria that teem in the mucous membrane around these defects are too often fatal. The easy access of dust and of cold air to the



Fig. 4. H. B. Another view showing fulness of the upper lip.

pharynx through a double hare-lip and cleft palate maintains a constant inflammation of the mucosa of the pharynx and particularly the mucosa along the edges of the cleft. This inflammatory condition favors harboring germs that may cause pneumonia, gastro-enteritis, and other infective diseases.

It is not the purpose of this paper to rehearse the various operations for the correction of



Fig. 5. Profile of a child operated upon for hare-lip. This picture shows the tension on the upper lip, which results from failure to loosen thoroughly the attachments of the lip and the alae of the nose.

hare-lip or cleft palate, but merely to call attention to some underlying principles. In hare-lip, one of the most important points is to loosen thoroughly the lip and the ala of the nose from the cheek so the lines of incision can be approximated without tension. This dissection should be the first step in the operation after the lines of incision have been marked out. The bleeding is readily controlled by immediately

packing the raw surface with dry gauze and by rather firm pressure with the finger of an assistant. The lines of the incision, which have previously been marked out, can now be completed and one or two main sutures inserted, which tend to check the bleeding points and also approximate the raw surfaces. The final



Fig. 6. Nellie F. Age, 16 days. Double hare-lip and cleft palate with premaxillary bone. This picture was taken the day before the operation.

sutures should not be put in until after the packing has been removed, so the lips can be coapted without the bulging of the packing. If a premaxillary bone is present, it should be set into place by taking a V-shaped piece of bone from the septum. Care should be taken to excise enough bone to permit the premaxillary bone to fit easily into the space between the two superior maxillas. The V-shaped piece should not extend any higher than necessary to loosen the



Fig. 7. Nellie F. Another view, showing the premaxillary bone.

bone thoroughly so as to avoid interfering with the nutrition of the premaxillary bone. The mucous membrane on each side of the premaxillary bone and on corresponding portions of the cleft in the alveolar process should, of course,

be denuded. The premaxillary bone may then be dropped into place and held in this position by a silver wire suture, which is placed through the alveolar process on each side and surrounds the premaxillary bone. This suture

thus formed, which consists on each side of the vermilion border of the lip and from one-fourth to one-half an inch of tissue above the vermilion border. A suture of rather fine silkworm gut is then placed in the flap. This suture



Fig. 8. Nellie F. Showing condition of lip two weeks after the second operation.

should be twisted internally in the cleft and not externally beneath the lip. Young children bear long operations very poorly and it is better to fix the premaxillary bone in position at one operation and then do the hare-lip a week or two later.

The incision in a double hare-lip should first



Fig. 9. Nellie F. About four months after operation.

denude the edges of the small projection of lip that covers the premaxillary bone. Another incision should then begin at the upper extremity of the hare-lip just within the ala of the nose, and be carried down along the junction of mucous membrane and skin to the level of the lower border of that portion of the lip covering the premaxillary bone; here the paring of mucosa should be cut off and the incision should turn outward, and should be prolonged outward sufficiently to relieve tension on the flap



Fig. 10. James P. Age, 7 months. Single hare-lip and cleft palate. Photograph taken before operation.

should be carefully placed so that it is exactly the same distance above the vermilion border on each side. Two other sutures of silkworm gut unite the portion of the lip that covers the premaxillary bone to the tissue of the lip on each side. The rest of the sutures are of fine silk and are placed with small curved needles



Fig. 11. James P. About three months after operation.

until the approximation is accurate. Tension is relieved by strips of adhesive plaster, which begin on the cheek and neck, and are brought up with considerable force, crossing each other on the bridge of the nose, and forming an "X," with the upper extremities of the strips extending over the forehead. The line of incision is dusted with boric acid powder and no other dressing is applied. The child should be fed with a spoon or tube, so as to give the lip as

much rest as possible. The fine stitches may be removed in five or six days, the silkworm gut stitches should remain longer. The time of their removal depends upon the promptness of the healing as well as upon other features, such as the tendency of the child to cry, etc.

Operations on cleft palate may be done according to the recommendation of Lane in the first few weeks, though usually they are postponed until after the patient is a year old. It is important to operate upon an accompanying hare-lip at as early a date as possible. When a child with a hare-lip and cleft palate cries, the



Fig. 12. James C. Age, 6 years. Double hare-lip and cleft palate, with protruding premaxillary bone. This picture was taken the day before operation.

contraction of the muscles of the cheek pulls on the fixed points at the alae of the nose on each side of the cleft and tends constantly to widen a cleft through the alveolar process. If the hare-lip is corrected, this contraction, instead of pulling the cleft apart, tends to force it together by referring the pressure to the reconstructed lip, and taking away the pull from the alae of the nose, which should always be dissected free from maxillary bone at the time of the hare-lip operation.

The choice of operations for cleft palate depends upon the nature of the cleft. Probably two general types will cover all cases. The Lane operation represents one type in which a flap of mucous membrane is dissected up from the palate, turned over, and tucked under the mucous membrane of the palate on the opposite side. Mr. Lane does this operation in very young children, and when the defect is large, he takes a flap of mucous membrane that will extend over the alveolar process, if the child is operated upon before the teeth have erupted. Sometimes the flap even goes over on the cheek. This is merely an application of the principle

of Szymanowski, which is so valuable in plastic surgery generally, and consists of the lifting of a flap, turning it over with the raw side up, tucking it underneath the skin or mucous membrane on the other side of the defect or fistula, and fastening it in this position with sutures.



Fig. 13. Another view of patient shown in Fig. 12.

The method I have usually followed has been the simple one of freeing the flaps by incisions parallel to the alveolar process on each side and extending well back so as to sever the muscles of the soft palate. Each side of the cleft is carefully pared and the flaps are loosened thoroughly, but with as much gentleness as possi-



Fig. 14. James C. Photograph taken two weeks after the second operation.

ble. It is utterly useless to attempt to bring together flaps where there is tension, and a suture in a cleft palate that is under tension is certain to cut out. The margins are approximated with fine silkworm gut or with silk or linen. A piece of iodoform gauze is carried beneath the flaps and fastened by a single suture. The gauze is then turned so that the suture is towards the nose and the smooth surface of the gauze presents towards the mouth. This sug-

gestion of Dr. C. H. Mayo is quite valuable, and not only relaxes the flaps so the stitches can heal more readily, but affords drainage and to some extent protects the line of the incision. In no branch of surgery is it more important to deal with tissues gently and to avoid unnecessary rough handling than in operations upon hare-lip and cleft palate, for success in this locality depends upon the nutrition of the tissue, as it is impossible to keep the parts sterile.

There is hardly any case of cleft palate or hare-lip that cannot be corrected by proper operation. Sometimes a series of operations is necessary to obtain the desired result, but with patience on the part of both the patient and the surgeon and care and skill in the operation defects that are apparently hopeless can often be cured.

VICIOUS CIRCLES IN DISEASE.*

By PHILIP S. ROY, M. D., Washington, D. C.

No practitioner of medicine can afford to neglect this important subject, linking, as it does, diagnosis, prognosis and treatment. I do not expect to offer in this paper anything original, but rather to give the suggestions that have come from many writers. In preparing this paper I have freely made use of J. B. Hurry's excellent little book entitled "Vicious Circles in Disease." This subject is one to which I have given considerable attention.

So often when we are called to treat a case of disease the first symptom that is given us by the patient will entirely lead us from the true pathological condition and we will find ourselves treating a symptom rather than the true disease. I do not think anything has impressed me more as regards the truth of this statement than a case of pernicious anemia, which is now under my observation. The patient told me on my first visit that she had no appetite and nausea—indeed, all the symptoms that she described were those pertaining to the stomach, except that she had felt very tired. I found her hemoglobin index 50, and ten days afterwards, by a blood count, discovered that my patient was suffering from pernicious anemia. Here was clearly a vicious circle between the impoverished blood not nourishing the stomach, and, consequently, the stomach was utterly unable to perform its usual functions of digestion without marked distress and nausea. This

patient also had suffered greatly from general nervousness at times, a most common symptom in pernicious anemia and one that every internist should keep well in mind. I would advise that we never treat a case of what we usually term general nervousness without having a most careful blood examination made. It may be one of the very first symptoms of commencing pernicious anemia. We all know how often the patient is sent to the neurologist for spastic paralysis and other nerve symptoms, the true condition not having been discovered by the internist.

We can turn to almost any system of the body and find the most striking illustrations of vicious circles in disease. To me one of the most interesting cases can be found in the London Lancet of 1828. This vicious circle occurred in a case of venesection. I shall give the exact words of the Lancet:

"A man fell from a scaffold and fractured several ribs. On reaching St. Bartholomew's Hospital early on a Friday morning, he was bled 18 oz., and at noon 20 oz. more. The next day a further 18 oz. were taken, and on the following day 18 oz. at noon and 18 oz. in the evening. On Monday the pulse was small and jerking, but very compressible. This condition was regarded as 'indicative of inflammation and not resulting from loss of blood or haemorrhagic irritation.' Accordingly bleeding was again ordered to the extent of 18 oz. The dresser in charge of the case, however, alarmed by the condition following the loss of a few ounces, desisted from drawing any more. Nevertheless, when about two hours later two surgeons saw the man in consultation, they ordered 20 oz. more to be drawn. After this the pulse became a mere flutter, death taking place a few hours later."

Another striking illustration in connection with the circulation, can be found in nearly all of the valvular diseases of the heart and in diseases of the arterial and venous system, for these diseases in turn, by the vicious circle, affect the circulation either in the arteries or the veins of the walls of the heart, causing injury to the muscle of the heart through lack of nutrition.

Again an illustration is found in pneumonia. The right side of the heart becoming dilated prevents the proper emptying of the coronary veins of the heart, thus impeding the nutrition of the heart muscle; and an excellent illustra-

*Read by title before the forty-second annual meeting of the Medical Society of Virginia, at Richmond, October 24-27, 1911.

tion, where the arterial circulation of the wall of the heart is enfeebled, is in aortic regurgitation. It is in the dilatation of the right side of the heart in pneumonia that we get such beneficial results from moderate blood letting.

Hurry draws from the circulation still another illustration—pulmonary hemorrhage, cough, rise of blood pressure, and renewed hemorrhage act and react on each other. One practitioner will break the circle by the use of nitrate of amyl and another stops the cough by using morphia. In each case, however, the point of least resistance is attacked and either treatment may break the vicious circle.

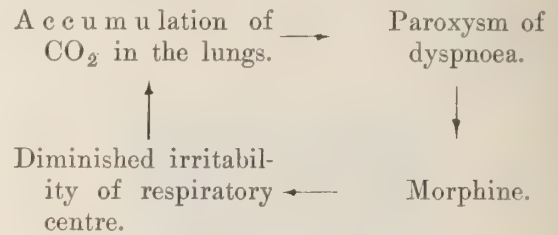
Still another illustration may be drawn from the circulation in connection with bad therapeutics in cases of shock. For years strychnia was the routine treatment in shock, but recent manometric observations have proved that stimulants of any kind are useless for the purpose of arresting the fall of blood pressure. Strychnia rather paralyzes vaso-motor action and thus lowers the pressure. In other words, we gave the drug that increased rather than lessened the symptom of shock.

Lauder Brunton graphically describes the vicious circle attending cardiac disease. I will give his exact words:

"The disordered circulation disturbs the functions of other organs, and these in turn make the circulation worse. * * * The disordered circulation interferes with the functions of the lungs, liver, stomach, intestines and kidneys. On account of the difficulty of breathing, exercise becomes impossible, and thus all the accessory aids to circulation given by the muscles and fasciae during movement are done away with. Appetite becomes lessened and flatulence increases; the elimination of waste products by the kidneys is interfered with, and distension of the abdomen either by flatulence alone or by flatulence with ascites, presses the diaphragm up, encroaches upon the breathing space in the lungs, and tilts the heart up, thus still further increasing its difficulties."

Often in our therapeutics we have to be careful not to establish a vicious circle. I know of no drug that will act quicker and more beneficially in cardiac asthma than morphia, yet morphia diminishes the irritability of the respiratory circle and allows CO_2 to collect in the blood. The asthmatic then requires an increased dose of morphia to relieve him, and a

circle is created which Hirschfelder represents in the following way:



I will cite one or two instances of the vicious circle in the urinary system. Renal insufficiency is often brought about by deleterious conditions in the blood, impairing the nutrition and efficacy of the renal epithelium. This impaired efficiency, in turn, keeps the blood impure and completes the circle which is, indeed, frequently the cause of death. Adami thus describes the condition:

"Functional inadequacy of the kidneys is not without its effect upon the composition of the blood. The quantity of water eliminated may deviate considerably from the normal, and waste products may be retained instead of excreted. The quality of the blood is thus depreciated, and, being laden with toxic substances, it in turn exerts an irritating and deteriorating effect upon the kidneys. In this way a vicious circle is set up, as a result of which the condition of the patient goes rapidly from bad to worse."

We also find the vicious circle in atony of the bladder, described by Keen and Da Costa in the following words:

"Prolonged or repeated retention, with overstretching of the organ, from any cause whatever, results in weakening of the detrusor muscles, reducing their contractibility and producing the condition called atony; while, on the other hand, atony itself contributes to further retention by reason of the inability of the weakened muscles to expel the urine. Thus is established a vicious circle that forms the intimate relation between the two conditions."

There are many good illustrations of the vicious circle to be found in diseases of the nervous system; in neurasthenia with its attendant insomnia. And again in the insomnia attending mental depression and grief, causing a vicious circle so admirably described by Shakespeare:

"Sorrow's weight doth heavier grow
Through debt that bankrupt sleep doth sorrow
owe."

We have another illustration in the so-called railroad spine, and many of the cases of reported miraculous cures at shrines have been nothing more than breaking the vicious circle between the brain centers and the motor and sensitive nerves.

An example of the vicious circle in the nervous system is seen when the mind of a woman becomes so disturbed from a sensitive ovary that she imagines every conceivable form of pelvic disease. This condition is often exaggerated by her falling into the hands of a pseudo-gynecologist wanting both in intelligence and conscience, and the woman becomes a nervous wreck. The intelligent neurologist assures her that there is no serious condition of the pelvic organ, and with judicious medical treatment to quiet the sensitive condition of the ovary, restores the patient to happiness and health. I have myself, on several occasions, after having been assured by a competent gynecologist that no serious pelvic condition existed, entirely cured my patient by the judicious use of the bromides. And let me say in this connection that it seems to me rather the tendency now of neurologists to decry the use of bromides except in one disease, epilepsy; and yet there is no question in my mind that to-day bromides hold the first place in therapeutics in stopping nerve storms, not only in the brain, but in other organs of the body.

An excellent illustration of the vicious circle is found by the neurologist in cases where the internist or general practitioner has made a diagnosis of weak heart, a most indefinite, and, generally, an erroneous diagnosis. The constant direction of the mind to this organ leads to morbid consciousness of any trivial difference in its movements, and it often requires the highest qualities of the psychotherapist to break the vicious circle. There are many illustrations to be found in diseases of the eye. One of the most striking given by Hurry, is papilloedema:

"The development of 'choked disc' or papilloedema may be dependent on a reciprocity of action. The primary cause is usually to be found in an increase of intra-cranial pressure due to hydrocephalus or a new growth, which forces the subarachnoid fluid into the sheaths of the optic nerve. Hence result engorgement of the central vein of the retina, oedema of the optic nerve, and swelling of the papilla. The nerve becomes incarcerated at the point where it fits tightly in the foramen sclerae, and causes

strangulation of the papilla and thus further obstruction in the vein. In the words of Victor Horsley, 'the resistance of the scleral ring causes strangulation and thereby sets up a vicious circle of pressures.' "

R. W. Doyme has recently drawn attention to a circle that is frequently present in anisometropia, disturbance of the fusion centre and exhaustion of the muscles of accommodation being *participes criminis*:

"The trouble arises from a vicious circle. The fusion centre demands clear images and makes demands on the lower centres which control the muscles of the eyes; the muscles become exhausted, the images become indistinct, and the fusion centre becomes imperious, as its task becomes more difficult. Moreover, all these details are mainly subconscious and independent of the will."

The ophthalmologist has almost innumerable vicious circles connected with his specialty. I will add another to those that have already been given. Phlyctenular conjunctivitis, due largely to malnutrition and struma, often causes such extreme photophobia that the affected person shrinks from light for weeks or months. In many cases it is almost impossible to get them into the fresh air, and this deprivation of fresh air with its attendant hygiene, lowers their already depressed nutrition and aggravates the disease.

Often we find the vicious circle occurring in the use of foods. Heavy tea drinkers nearly always suffer with dyspepsia. The dyspepsia is relieved by the tea for a time. Returning, more tea is required, and thus a circle is established by excessive tea drinkers.

The gynecologist sees many vicious circles connected with his work. In Allbutt, Playfair and Eden's Gynecology we find described a very common condition in women who have borne children very rapidly:

"These symptoms are those of nervous exhaustion produced by the strain on the nervous energy of pregnancy, labor, and suckling, together with the worry and disturbed rest which the care of a young family involves. The morbid states form a vicious circle. Want of sleep exhausts the nervous system, and nervous exhaustion prevents sound sleep. Weakness of digestion due to nervous exhaustion impairs nutrition, and the discomfort after food helps to prevent sleep. The nervous exhaustion causes the pain, and the pain, in its turn, aggravates

the nervous exhaustion, partly by the direct effect of the pain, partly because it suggests to the patient fear of worse evils to come."

The general practitioner finds many cases of constipation due to a sensitive ovary. The effort to move the bowel causes an increase of the ovarian pain, and the constipation keeps up the ovarian irritation.

Job has offered us much good advice in his book, but in one instance his advice would certainly establish a most vicious circle, both sociologically and physically. He says in the Book of Proverbs, "Give wine unto the bitter soul; let him drink and forget his poverty and remember his misery no more." Alcoholic indulgence would simply intensify the misery and poverty.

Though I have drawn my illustrations from but few of the systems, there is not one of the systems of the body calling for medical treatment that does not show many illustrations of the vicious circle; in other words—the morbid process by which two or more disorders are so correlated that they act and react reciprocally upon each other.

My principal object in calling the Society's attention to this subject is to impress upon the internist the absolute importance of mastering, as far as possible, the general principles of all the pathological conditions of the body; which includes a clear knowledge of all specialties. I know it seems almost beyond the capacity of one mind to grasp all branches of medicine, yet the internist can not completely do his work, in diagnosis, prognosis, or treatment, unless every system of the body is clearly pictured in his mind so that symptoms far away from the center of disease will bring his well-trained thought to the point that has been pathologically attacked. With such equipment the internist must *take first place in the field of medicine and all the separate branches must be grouped around internal medicine.*

No one can come to such a meeting as this without carrying home a rich harvest of knowledge that must enable him to do better work in his profession. I always listen with greater care to the papers coming under special lines than to those that come under what we generally term Medicine, because it is from this storehouse of accrued knowledge of the specialist that the internist must build his larger structure.

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ENTERO-COLITIS.*

By J. LUTHER SHEPPE, A. B., M. D., Mt. Sidney, Va.

Enterocolitis is an infectious disease, met with usually during the summer months, and in children under two years of age, although it occurs at all seasons, and all ages are subject to its ravages. The old as well as the young are numbered among its victims. To undertake to differentiate the catarrhal, follicular and ulcerative forms during life is to attempt the impossible, since these types of the disease denote merely the degree of the pathological process and not distinct entities.

The causative factors are those predisposing to diarrhoeal diseases in general, and may be summed up in the one word, irritants. These may be mechanical, chemical, toxic, or infectious. Mechanical and chemical irritants are to be found in the bowel-contents and give rise to the inflammatory condition by direct action upon the intestinal mucosa. Undigested food in the stomach or intestines as a result of over-eating or of the ingestion of improper food may constitute a mechanical irritant, producing a catarrhal inflammation of the bowel. Acids, alkalies and other substances, as camphor, turpentine, the heavy metals and their salts, etc., act as chemical irritants, and when ingested, set up a violent enteritis.

Toxic irritants enter the circulation by absorption from the gut, and in addition to inaugurating an acute inflammatory process in the bowel, give rise to a general toxemia. To this class of irritants belong ptomaines or toxalbumins, ingested with tainted or spoiled food, or resulting from the decomposition of food in the intestinal canal, toxins elaborated in the body as waste products, and the various bacterial poisons.

Thus far we have noticed briefly the non-specific agencies, giving rise to acute gastroenteric diseases in which diarrhoea is a presenting symptom.

In specific enteritis the infectious element is the *Bacillus dysenteriae*, of Shiga. This organism bears a close resemblance to the typhoid and colon group of bacteria, slight cultural differences only being the distinguishing marks. These organisms, also, were found by Duval and Bassett, of Baltimore, in forty-two out of fifty-three cases of summer diarrhoea in infants. It is safe to say that a large per cent. of the

*Read before the Augusta County Medical Association, at Staunton, Va., November 15, 1911.

cases of summer diarrhœas in which mucus, or blood and mucus appears in the stools, is caused by the Shiga bacilli, or their congeners.

The bacilli are found in the feces in immense numbers, but never in the skin, blood or urine, as in typhoid fever. The infection may be spread by flies, by contact, by water, by raw vegetables and by milk.

Among other associated micro-organisms found in infectious enteritis may be mentioned streptococci, colon bacilli, *Proteus vulgaris*, and the bacillus enteritidis sporogenes.

In acute entero-colitis the affected area includes the lower two or three feet of the ileum and the colon. In about half of the cases, however, the colon alone is involved. Marked deteriorative changes occur in the epithelium and mucosa and in the severer cases the sub-mucosa may be seriously affected. The lesions vary from a catarrhal inflammation of the mucous membrane, of greater or less severity, to an extensive ulceration of the mucosa of the entire colon. Post mortem examination shows that in about one-third of the fatal cases ulceration of the lymph follicles, also, has taken place. Occasionally lesions of a diphtheritic nature occur, in which the formation of a pseudo-membrane is seen.

The duration of acute entero-colitis varies from ten days to two or three weeks, and even longer. It is rare that improvement is manifest in less time than a week or that recovery takes place under ten days. And right here we often find difficulty in convincing parents, mothers especially, that time is necessary in which to establish normal conditions and that immediate improvement must not be expected. They become anxious and impatient and want the doctor to give the little patient "something to check its bowels" at once.

Acute gastro-enteritis may be the primary infection, but in a majority of cases the condition follows acute gastro-enteric indigestion, or gastro-enteric infection. Not infrequently it follows other infectious diseases, as measles, diphtheria and broncho-pneumonia, in which it may be the terminal affection.

The initial symptoms are often those of acute indigestion. The onset may be ushered in by convulsions. Vomiting occurs; the temperature rises, ranging from 99 degrees to 102 degrees, or higher; the tongue is coated; appetite is wanting; the abdomen becomes swollen and tender. The stools, accompanied by pain and tenesmus,

are frequent, often numbering a score or more in twenty-four hours. These, at first semi-solid, containing undigested food, soon become thin, of a greenish or yellowish cast, streaked with blood and mucus.

As the disease process progresses, blood and mucus in the discharges are more abundant, abdominal pain more severe, and tenesmus more marked. Extreme prostration supervenes. The urine is greatly diminished in quantity, highly colored, highly acid, of high specific gravity, and may contain albumin and casts. The presence of blood and pus in the stools is pathognomonic of ulceration. The presence of pus indicates ulceration of the lymph follicles, when we have a serious condition to combat.

Not rarely, meningeal inflammation with evidence of cerebral involvement, sets up as a complication, shown by nervous restlessness, and the tossing of the head from side to side on the pillow, which adds to the gravity of the case. Then shall we have a battle royal, then will our knowledge and skill be taxed to the utmost, if we shall succeed in preventing the rider of the Pale Horse from claiming our little patient as a victim.

Treatment, which should be instituted early, in acute entero-colitis, should be directed to the accomplishment of three objects: 1. To modify the severity of the inflammatory process in order to preserve the integrity of the tissues involved and prevent, if possible, extensive ulceration and necrosis. 2. To sustain the vitality of the patient and reinforce his powers of resistance in the battle for life. 3. To prevent toxin-absorption from the intestinal tract and thus avoid the dangers of autotoxemia.

To this end, therefore, clean out the *primæ viæ*, with minimal doses of calomel, grain 1-10 to 1-6, every half hour or hour, until one grain has been taken, adding to every third dose grain, 1-12 of podophyllotoxin. Two hours after the last dose, give a teaspoonful of effervescent magnesium sulphate and repeat every two hours until the bowel has been swept clear of its poison-bearing, bacteria-laden contents. This treatment should be repeated in forty-eight hours. The saline should be given in small non-irritant doses three or four times a day throughout the course of the disease. By this means the swollen tissues will be cleansed, soothed, and depleted.

Some may prefer castor oil to the saline. If

so, two drams should be administered as the initial dose, and small doses several times a day thereafter.

To prevent the formation and absorption of the toxic products of decomposition and putrefaction and to render the upper bowel aseptic, a teaspoonful of a solution of the compound phenol-sulphonates of lime, soda and zinc, 16 to 20 grains to an ounce, should be exhibited every three hours. Every hour emetine in doses of one milligram, adding to every fourth dose one centigram each of hydrastin and hamamelin, should be administered. If nausea supervene, the emetine should be discontinued until the next day, and then repeated, until improvement is manifest. Emetine is a valuable drug in all acute bowel troubles, promoting the flow of bile and stimulating healthy intestinal secretions.

To the treatment here outlined nuclein may well be added in adequate dosage to reinforce the defensive proteids of the body and to increase vital resistance.

As a topical remedy to allay inflammation, bismuth subnitrate has been largely employed. Thus used, it is best given by enema in full doses, suspended in a thin mucilage of acacia. One to four drams in a half pint of mucilage may be given in this way. For the same purpose it may be exhibited internally; but to be of any service, massive doses must be used—10 to 20 grains in aromatic syrup of rhubarb, a teaspoonful every two or three hours.

Twice daily the colon should be flushed with decinormal salt solution. I am in the habit of using for this purpose, however, a 1:500 solution of the sulphocarbates of lime, soda and zinc, to which is added two ounces of a preparation of *calendula officinalis*, resorcin, and bismuth. The result obtained from this medication has been highly satisfactory. A No. 16, soft rubber catheter, American scale, is used in making the injection. Enemata, whether plain or medicated, should be given as hot as can be borne. By this means irritation will be lessened, the swollen and inflamed tissues will be soothed and depleted, and the tenesmus will be greatly alleviated.

After each stool an injection of two drams of a mixture of the aqueous extract of hamamelis virginiana, one dram and water one ounce, should be thrown into the rectum, using a rectal syringe, and a compress of gauze to prevent its being expelled. This is a useful measure, also of overcoming and preventing

tenesmus, which it usually does. The old-fashioned starch-water and laudanum mixture may be employed for the same purpose.

Hot fomentations, spice poultices, and turpentine stupes over the abdomen are grateful to the patient and aid much in relieving pain and in assuaging the inflamed and hyperemic condition of the bowels. I usually order an inunction at intervals of three or four hours, of a mixture of equal parts of turpentine and olive oil, after which the abdomen is covered with flannels wrung out of hot water, applied as hot as can be borne, and renewed as often as they become cool.

Treatment, other than here suggested, will be symptomatic. Fever, in these cases, as a rule, is not of sufficient importance to require special attention. If the temperature reaches 102 degrees or above, a cool or cold sponging for ten or fifteen minutes with plain water or with alcohol and water, one part alcohol to four parts water, every two hours or oftener, if necessary, will not only reduce the fever within safe limits, but will quiet restlessness and promote the well-being of the patient. Indeed, it is well to order a cool sponging, three or four times a day, as a routine measure. For this purpose, nothing in my opinion equals a solution of magnesium sulphate, one ounce to the pint, to which ten minims of phenol has been added. If vomiting be troublesome, atropin or hyoscyamin will bring about reaction and put a stop to it in a short time. If the heart need support, strychnine, brucine, glonoin cactin and digitalin, severally or in combination, as the case requires, will prove promptly efficient. Opiates have no place in the treatment of diarrhœal diseases of children for obvious reasons. The only indication for the use of opiates in these conditions is to check decided peristalsis, and this may be better accomplished by other and safer means. If used at all, codeine should be employed in dosage sufficient to produce the desired effect and no more.

Since both digestion and absorption are seriously interfered with in all enteric troubles, the diet should be light, nutritious and free from waste. Food should be given at frequent intervals and in small quantities. The raw white of egg in cold water is most easily assimilated without digestion. This should be given every two to four hours. Barley or rice water, to which an ounce of chicken or mutton broth has been added, with a little salt to make them

more palatable, should be utilized. Oyster, mutton, beef, chicken and other animal broths, with the fat removed, will furnish variety. Beef juice, liquid peptonoids, bovine and other similar preparations will be needed in many cases.

Milk should be forbidden and sugar and starchy foods should be withheld until convalescence is well established.

Under the treatment here outlined, with variations to suit each individual case, the per cent. of fatalities from this, one of the most dangerous and distressing diseases of childhood, will be small.

SOCIOLOGICAL ASPECT OF SYPHILIS.*

By CHARLES E. BARNETT, M. D., Fort Wayne, Ind.

The sociological aspect of syphilis is a question of State concern, for syphilis not alone deteriorates the State's own subject and his progeny, but they, on account of their syphilitic degeneration, help to fill the State institutions, thus bringing a monetary factor into play.

Man's ungovernable lust for things sexual is well illustrated in Michael de Angelos' classic carvings showing how Rome got her start by forcefully taking and ravishing the women from the Sabine tribe, and, strange as it seems, those women enjoyed the insult to their virginity. Today the girl is kidnapped into seduction with a bit of fine wearing apparel, an auto ride or a pretended love. Our lowest animal's sexual relation compared to man would leave a blot on the human kind that would beggar description.

Man's sexual debauchery has no definition defining its degradation. The classification is composed of our (so-called) good, bad and indifferent people—the upper stratum as well as the lower stratum. It is astounding the number of "scarlet letters" that are exposed after the clothing is removed.

Men claim themselves to be the stronger sex. Outside of sexuality, that may be true, but from a sexual standpoint, if woman was not the stronger, a virtuous woman would be hard to find inhabiting the universe to-day. "No man will have the hardihood to deny that one woman of average looks, grace and manner can seduce, overcome and lead in forbidden paths fifty men, to every woman that one of the fifty men can subordinate to his passions."

As it has been said, "perhaps it is to this that we owe the laws for the protection of *weak young men, and still weaker old men*, who lack the power of continence and bow down to the shrine of Venus, where her altars are served by the debris of our rotten civilization and have thus inoculated the currents of their lives, poisoned the source of existence and added physical degeneration to social and civic rottenness."

These statements may seem severe and pessimistic. That may be true, for no doubt there are many people, especially in the rural districts, who are not applicable to this stigmata, yet, taking authentic statistics, one would logically conclude even more severely. Eighty per cent. of all men have had gonorrhea. Seventy per cent. of gynecological operations have gonorrhea as an etiologic factor. Syphilis is not included in these statistics, yet it is a companion disease. This would lead one to believe that all men had been at some time contaminated venereally except "Thee and Me"—and I have my doubts about "Thee."

The question how to prevent men from contracting the disease seems to be as difficult today as it has been since time immemorial. As a prophylaxis, probably the use of calomel ointment is as easily applied and efficacious as any other way.

For the treatment of the indigent poor a department of venereal diseases in a State hospital should be provided or, better still, a government hospital for venereal diseases should be instituted, whereby all patients are under absolute control. These patients should receive their admittance by Wassermann positive test, and be discharged not until repeated Wassermann negative has shown. In the latter scheme we would be patterning after the older countries which have had a longer experience in the management of this disease than we. It is markedly necessary for this class of patients to have the benefit of the valuable laboratory diagnostic work and thorough surgical treatment, such as the intravenous salvarsan injections, that otherwise would be deprived them on account of poverty.

Fate has seemed more cruel in dealing with syphilis than with any of the other diseases from which the human race suffers. What exhibition of pathos is more pronounced than to see an innocent child scourged on account of the sins of his parentage with this most loathsome disease!

*Read in the Symposium on Syphilis before the Indiana State Medical Association, at Indianapolis, September 28, 1911.

Within the year the writer has heard the statement from good authority that a Wassermann positive always occurred from the progeny of syphilitics, thus overthrowing Profeta's law, or all laws of immunity. Fortunately this statement has been proven erroneous.

The question of a segregated vice district is always a debatable one. Personally, the writer is rather inclined to consider that kind of a district as a necessary evil as a prophylaxis against probable injury to our virtuous girls.

It is the writer's opinion that the present publicity education of venereal diseases, for the time being, is a detriment rather than a benefit to humanity. It seems to have awakened sexual action in some minds that otherwise would have remained dormant. When, however, the education finally permeates the mind sufficiently to show the dangers of inoculation and the necessity of self-preservation of the body against syphilis, then the good will have been done on account of education.

A recent education which the laity received through the newspapers that is likely to do harm rather than good, was the announcement of the Ehrlich-Hata salvarsan discovery and its overestimated benefit possibilities in the treatment of lues. The concensus of opinion was that a single application of the drug would completely eradicate syphilis almost instantaneously, and our "quack" brethren are "advising" the people that that is so. This belief will tend to eliminate syphilophobia from their minds and may invite greater hazards to be taken when in its environment.

While salvarsan is a great boon to the treatment of syphilis, yet, unfortunately, it has not proven itself to have reached the expectations of our most conservative men. The writer had a short time ago the privilege of receiving the following answer to the following question asked one of our greatest syphilographers, Professor Finger, of Vienna:

Ques. Is it possible to entirely sterilize the body from the syphilitic spirochete by the use of salvarsan (Ehrlich-Hata "606")?

Ans. No.

So we must educate the people that "606," mercury and plenty of time, is still necessary for a cure.

The question of marriage when lues is present is almost entirely in the hands of the attending physician. A law against such a union is good to have for the purpose of appeal if

necessary, but it is preposterous to expect the physician to expose his patient, who, perchance, is financially well off (for syphilis and plutocracy are said to run hand in hand), and thus deprive himself of his daily bread by receiving the condemnation of his patient and his patient's friends. It should be the duty of every medical man, in spite of any financial or social loss, to protect the innocent against infection.

The following is a fair example of the type that needs the most control: A man of the town, "sporty," a "rounder," as he is called, who has an Hunarian battle scar upon his scabby pock polluted person, generally selects, if he be well fixed financially, a virtuous girl in marriage. The physician's duty is to prevent this marriage, in spite of all obstacles, until the man has a scientifically clean bill of health.

I know of no human tragedy more appalling than the blood of a ruptured hymen innocently bathing the syphilitic virus from a "whoremonger," who has procured his victim by way of the laws of matrimony.

The responsibility all rests with the medical man, and he is a veritable coward if he fails to protect the innocent.

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DIPHTHERIA.*

By THOS. F. KEEN, M. D., Hamilton, Va.

I have chosen for my subject *Diphtheria*—that loathsome, horrid, meanest of all diseases. Horrid and mean, to me personally, because it robbed my fireside of one of the sweetest and brightest little girls of nine summers, and because it has also robbed so many other firesides of their dear little ones. You, my dear doctors, and perhaps some mothers and fathers here, have seen its ravages. I am not going into the diagnosis, etiology and pathology of this disease. You all know it better than I could tell you. Under the circumstances, I am sure you will permit me rather exultantly, but, I hope with pardonable pride, to tell you that I have the reputation of having cured more cases of diphtheria before the introduction of antitoxine, than any other physician in my county. I had eight cases in one family at one time, and saved them all, even in those days. I believed in mopping the membrane off and applying, locally, a solution of carbolic acid, chlorate of potash, glycerine and water, and iron, chlorate

*Read before the Shenandoah County Medical Society, at Woodstock, Va., June, 1911.

of potash, glycerine and water internally. Most doctors, in fact, all in my section, opposed my treatment, but I got results, and you all know nothing succeeds like success.

Then I heard of Dr. O'Dwyer, in New York. I saw in a New York journal that he was curing membranous croup by introducing a gold tube into the larynx. I have often sat by the bedside of a dear little child choking to death, feeling perfectly helpless, but wondering why some one had not invented just such an appliance. As soon as I read this article I went to New York and hunted up Dr. O'Dwyer. He told me he had gotten wonderful results. I asked him what he would charge me to teach me how to use the tubes. He said five dollars an hour. I asked how long it would take me, and he said that depended upon how skillful I was. At any rate, he gave me twelve lessons, and I felt that I was competent to do the work, so I came home and waited for a case. I had a little child about twelve months old for my first case. I went to it with fear and trembling. Upon my arrival I found the dear little fellow cyanosed, gasping for breath. I fortunately slipped the tube into the larynx with ease. You can imagine my delight and pleasure when the little fellow commenced to breathe so easily that the dear mother said: "Oh, Doctor, my boy is not breathing at all." I was a little startled myself, but he was all right.

A rather amusing incident occurred in this case. It is customary to remove the tube on the 7th day, so I went over on that day and told the mother I would take the tube out. I remembered very well what I had been taught—that the tube was easier to put in than it was to get out. I went to work, the mother holding the child. I put on the extractor, got hold of the tube, it slipped over my finger, the child gave a gulp, and of course, down went the tube. I pulled out the extractor and the mother asked where the tube was. I replied, "Oh, that is here in some of these rags, don't worry about that." I was more worried than she. After the disappearance of the tube, I found that the child was not relieved, so I put in another and the child did well. I found the other tube later on. I returned in four days and the child was well.

My next case was in Leesburg, Va., in consultation with Dr. West. The patient was a boy 14 years old. I found him in a fearful

condition, cyanosed, cold, clammy perspiration standing out on him. I put the tube in and in a few minutes I could see his color returning. His people were delighted. I left him doing well, but during the night he died—I never knew why. The relief that the tube gave was wonderful, even though it did not save his life. His father told me that he was more than thankful to me for keeping his dear boy from choking to death.

My next case was a boy of 15 years. I was called 15 miles to see him. He had been given up to die by his physician—no hope, no chance at all. As I approached the town near his home I was told that the boy was dead. I said, "Well, I will go on anyway," so I went to his home. His father and mother, brothers and sisters were crying and calling to me to come quickly. I jumped out of my buggy and ran into the house. Dr. Galt, his attending physician, said: "I am afraid you are too late." I took out a tube as quickly as possible. The boy was almost black, cold and clammy, feeble pulse and tearing at his throat. I slipped the tube into his larynx and in a few minutes you could see life coming back to him. A gentleman who was looking on, said: "Well, that was certainly like cutting a rope from a hanging man's neck." This boy made a perfect recovery.

I lost some cases. I found, as we all have found, that there was something lacking, that we could not save all our cases. Shortly after this, I saw that Dr. Fischer, of New York, had been to Berlin and made a special study of diphtheria with antitoxine. I said to myself, "I have not been able to save my own little one's life, yet I might be able to save some other father's dear little ones," so I went to New York and hunted up Dr. Fischer. He was enthusiastic on antitoxine, and took me around with him and showed me what he was doing. He was getting wonderful results. Some of the medical men were down on him, but he was curing the cases.

In this connection, Mr. President, to more fully illustrate the feeling that existed with reference to antitoxine at this time (1895), I would be pleased, with your permission and the consent of the Society, to quote from a newspaper correspondence that took place in my county, yea, in my own town.

While I was in New York pursuing my investigation of antitoxine, Dr. J. W. Taylor, of

Hillsboro, one of the oldest and most reputable physicians of my county, wrote the following letter to *The Enterprise*, published in Hamilton, which appeared in its issue of February 8th, 1895:

"Editor *Enterprise*: As there appears to be quite a craze at this time among the doctors about the modern treatment of diphtheria by the injection of an animal serum called 'Antitoxine,' it may be well to guard the public mind, and more particularly those who may be so unfortunate as to have this disease to contend with in a malignant form not to be too much elated with all they may read in the press concerning its wonderful curative powers.

"Time and experimentation have not been sufficient to establish all that has been claimed for it, viz.: a specific for diphtheria, notwithstanding the question is as yet under able discussion for and against, and I shall not hesitate to use it when a proper and well defined case presents itself and the serum can be obtained in time. But the following *resume* and conclusions of an authority so acknowledged as Hansemann, of Berlin, Germany, ought to have its weight with every conservative physician. Hansemann says: 'The history of diphtheria has shown that the mortality rate is very frequently reduced by various methods of treatment. For example, Mayer, of Aix-la-Chapelle, treated 60 cases with iron. He lost but one case, and this came under treatment in a dying condition. Bonnefin lost but 37 cases out of 427 under local treatment, about 8 per cent., an unusually small number.'

"Hansemann believes that the reason that such good results are obtained in hospitals is not that the antitoxine has acted curatively, but that mild cases are treated. Another reason, a number of cases are pronounced diphtheria which have recovered without such diagnosis. He mentions a case of a child originally taken to the hospital for 'rickets.' The Loeffler bacilli (the microbes of diphtheria) were found. Treatment began within the first 24 hours. The disease progressed and tracheotomy was performed. The child died on the following day. The post-mortem disclosed a case of diphtheritic croup. There were no other complications to cause death. All the conditions demanded by the 'antitoxinists' were here fulfilled. If it is claimed that the original disease kill the child, Hansemann would oppose it with the following: 'If the antitoxine is a specific

some action must be obtained, and if no action is observed, then it is not a specific.'

"As to the harmlessness of antitoxine, he claims many sequelae, swelling of joints, urticaria, high temperature (104), coma, and others, such as weak heart, and great rapidity of pulse. These effects have been observed by other noted physicians. In addition a pernicious action is excited upon the kidneys. Hansemann concludes:

"'1st. There are no scientific, theoretic or experimental grounds for assuming that the so-called antitoxine is a specific remedy for diphtheria in man.

"'2nd. Proof of the specific action of the serum in man has not yet been obtained from practical experience.

"'3rd. Under certain conditions antitoxine may act injuriously, for it exerts a disintegrating influence upon the blood, and produces serious changes in the kidneys.'

"In the report of Hansemann, he shows from statistical information that more cases have been cured by local and constitutional treatment in proportion to numbers than by the antitoxine remedy, though by no means ignoring the latter.—J. W. TAYLOR, M. D."

When the paper containing this letter reached me in New York, I was painfully chagrined that my esteemed old friend and fellow physician had, in the absence of a personal investigation and a closer study of facts, so dangerously dashed into print. I at once, under date of February 15, gave my observations to the readers of the *Enterprise*, in a letter addressed to its editor, Mr. G. Ernest Leith, from which I quote the following paragraphs:

"You will recall that I told you while I was here taking a post-graduate course in the winter of '91, I found that, though the new remedy had been before the profession for about a year, very little was known of it; and even when here in '93, although it was casually referred to in the lecture room, I discovered that its wonderful curative powers were not well-established in this country, and it was by no means in general use. Since that time, however, there have been astonishing developments.

"I visited the famous Pasteur Institute on the 4th and through the kindness of Prof. Paul Gibier, A. M., M. D., was shown the whole *modus operandi*; from the injection of the diphtheritic virus into the horse, to the extraction of the antitoxine serum, and its subse-

quent injection between the shoulder blades of the patient—a child about three years of age. After this I listened to a most able lecture from Dr. Louis Fischer, the celebrated specialist in the diseases of children, etc., on 'The Use and Abuse of Antitoxine,' prepared after having been associated with Dr. Behring, of Berlin, for six months, in the investigation of this startling discovery. He stated that while he was in Germany he witnessed the recovery of five most malignant cases of diphtheria or membranous croup, which he claims is the same, that were treated with antitoxine.

"The next day I was gratified to receive an invitation from Dr. Fischer to attend with him, at a private residence, a case of membranous croup that had been given up by some of the most prominent physicians of the city, one of whom met us at the door and informed us that the child was dying. With almost breathless interest I crept in behind the great specialist and saw the little patient moribund, cyanosed, cold feet and almost pulseless. The doctor's first step was to carefully intubate the child. The cyanosis having subsided, he then injected 25,000 c. c. of antitoxine between its shoulder blades. On our return to the house the next day it was with ill-concealed joy, I saw the little child on its feet playing around the room in almost its normal health. Intubation relieved the cyanosis, but it was antitoxine that neutralized the deadly effects of the poisonous germs. Before the injection, the child's temperature was 103, pulse 130—and in 24 hours both were almost normal. The beauty of the treatment is that there are no bad after-effects, as some have supposed. The doctor states that the heart's action is not weakened by the injection, but rather grows stronger, and the temperature is lowered, falling by lysis and not by crisis.

"If the desired result is not obtained within 24 hours from the injection, it may be repeated on the second or even third day without hesitation, as there is, according to Haubner, Aronson, Baginsky, and others, no risk whatever in using the remedy, as it shows no reaction, in which case it differs from tuberculin and vaccine. No bad symptoms follow the use of antitoxine that can be directly attributable to it, unless it be in some cases a slight urticaria or an eruption resembling measles, which amounts to nothing and will disappear in a few days without treatment.

"I will not bother you with statistics further

than to say—as great as has heretofore been the percentage of mortality resulting from the above diseases, it has now, according to Prof. Baginsky, been reduced by the antitoxine remedy to about 13 per cent., as shown in the death of only 17 patients out of 128 cases treated from March 14th, '94—the time that Aronson's antitoxine was first used—to June 20th of the same year. You must bear in mind that it was only within the last year that antitoxine has been placed upon a distinct chemical basis. I am now thoroughly satisfied, from the highest authority and from what I have seen, that two grand results can be achieved by it: First, immunity, really, prophylaxis of diphtheria. Second, curative, or healing action, where the disease already exists. Prof. Fischer explains that when serum is thrown into the tissues (this is vague, but perhaps tissues will answer), or, better still, into the circulation, it neutralizes the poison produced by bacteria, accomplishing this by reason of certain substances that are formed. The 'immunity' can be demonstrated in test-tubes by mixing certain quantities of bacterial poison or products with serum, when the poison will be found neutralized.

"The only dark side I can see to this grand discovery is, that its use had not been established sooner; and I know every father and mother in the land will rejoice in the conquering of this deadly enemy."

It is only fair in passing from this correspondence to say that my late friend, Dr. Taylor, was a very broad and liberal-minded gentleman, as well as an able physician, and upon my return from New York he came to me to note the result of my investigations, and after witnessing the curative powers of antitoxine with my patients, he became a very enthusiastic advocate of its use and frequently summoned me in consultation with his patients. In sounding a caution to the county against antitoxine, he did no more than many other prominent and less conservative physicians were doing all over the country at the time.

I still thank God for antitoxine. I think it the most wonderful discovery of the age. We can go to a case of diphtheria now with confidence, feeling that within a few hours our patient will be well. With the intubation tubes and antitoxine we can cure most all, if not all, of our little ones of diphtheria. I have had eleven cases of membranous croup and cured

ten of them—one was too near death when I saw it, a case of genuine infection.

Now I want to say a few words to show you how much some people appreciate what you do for them. In the case I mentioned—the boy of 15—I never saw that boy again for a long time. It was in February when I intubated him. I was attending the Horse Show in Upperville in June, when a man walked up to me whom I recognized as Mr. N., the father of the boy. He was very loud in his praise, and said, "My wife is looking for you, having heard you were on the grounds." I told him I would be delighted to see her and the boy. He asked me to stand still a minute and he would look them up. I waited and in a few minutes they came. Mr. N. said, "This is my wife and you can kiss her if you want to." I thought I would leave that for her to do. She threw her arms over my shoulder and cried for joy, saying, "Here is my darling boy whom you saved for us." Then he ran up to me, threw his arm around my waist and said, "I thank you, Dr. Keen, for having saved my life." I tell you, ladies and gentlemen, that brought a lump in my throat and tears into my eyes and down my cheeks. We do not always get the thanks and the praise we deserve, neither do we always get the money for what we do.

I want to add a few words in regard to follicular tonsillitis. I have had some cases that I diagnosed simple follicular tonsillitis, gave a gargle or wash, and went away feeling that the patient would soon be well, but told the family to let me hear from them. In a few days I would be called, when I would find a genuine case of diphtheria. This has happened to me more than once, and I expect my colleagues have had the same experience. I always watch a case of tonsillitis carefully, treat it locally like it was diphtheria, and I have had no trouble with it since doing this.

I believe that diphtheria naturally exists in a child's throat and all it wants is something to start the bacilli to work, or set up an inflammatory condition for it to start its work. I remember on one occasion a prominent physician asked me to see three cases of "my kind" of diphtheria with him. I said, "All right, Doctor, I will meet you this evening." I went to a colored man's house with him. He said, "I believe you call every case of follicular tonsillitis diphtheria, and have gotten up a reputation for curing diphtheria." I replied, "Oh,

no, Doctor, I think I can diagnose a case of diphtheria as well as you can." We went in and examined the three children. "What do you think?" he asked. "Well, sir, I think your cases are follicular tonsillitis right now, but I wouldn't swear it would not be diphtheria in a few days." In less than a week all three of the children were dead and the doctor had the cabin burned down. I saw him afterwards and had the joke on him, by asking him if *he* could diagnose a case of diphtheria now.

I tell you, gentlemen, you cannot be too watchful. You had better make a mistake in giving antitoxine to these cases than to let them get the start on you. Antitoxine will do no harm. I went to see a case last winter with two physicians. They phoned me to come prepared to do intubation. I went and upon my arrival found a little girl with some *dyspnea*, but getting a sufficient amount of air. I asked the doctors how much antitoxine they had given the child and they said 5,000 units. "Well," I said, "give her 25,000 units and you will not need intubation." I came home, phoned the next day and received a reply that the little one was O. K.

Do not be afraid of antitoxine. If you have a malignant case, you have to give enough to overcome the toxic conditions, whether it takes 20,000 or 40,000 units. I think we are more likely to give too little than too much. In all my consultation cases I find the doctors afraid to use the required amount. If we use antitoxine early and in sufficient quantity, we will not need intubation. Very often antitoxine melts the membrane like a hot sun melts snow.

I would like to have said something concerning the general management of diphtheria and membranous croup, isolation of cases, etc., but I feel that I have imposed too long upon your valuable time already. I thank you for your attention, and assure you I consider it a very high honor and compliment to have been requested to read this wandering and desultory paper before this cultivated and enlightened body of physicians. Again I thank you for your patient attention.

THE THERAPEUTICS OF TUBERCULOSIS.*

By WILLIAM PORTER, M. D., St. Louis, Mo.
President of the Missouri State Sanatorium.

A large part of the therapeutics of tuberculosis is its early discovery. I would insist on

*Original abstract of address before the South Illinois Medical Society, at Mt. Vernon, Ill., November 3, 1911.

the careful study of the deductions made by Dr. Gray, who has preceded me and the value of early diagnosis as a part of successful care. The physician who has discovered foci of infection in a lung three months earlier than another, less careful, has twice the opportunity for accomplishing arrest or cure. Even where the general symptoms are those of tuberculosis and the results of laboratory tests and physical examination are absent, it is better to give the patient the benefit of the doubt and keep him under observation for a time. The treatment of tuberculosis and that of many of the early non-tubercular conditions may be so nearly the same in the beginning, that positive differentiation may be delayed for a short time, provided always, that the physician is doing all that he would do were the proof complete, a negative diagnosis is much more difficult than an affirmative one.

GENERAL INDICATIONS.

There are some directions that may be given in almost every case, to meet conditions that are generally present. They are important, as they form the basis of care, having a direct influence on the restoration of normal functions.

Rest. Absolute rest and quiet is necessary when there is temperature. My patients are in bed if there is an afternoon temperature of 101 degrees, and forbidden exercise if it is above normal. The slightest amount of physical or mental effort or excitement of any kind may so increase the pulmonary circulation that absorption from the foci of disease results with all of its attending evils.

Exercise. On the other hand, exercise—very moderate at first and continually increased may be permitted where there is a normal temperature. In fact, such exercise as will gradually develop respiratory function and capacity and heart and muscle tone is necessary, but only in afebrile cases.

Open Air is a positive need in all cases. The amount of healthy pulmonary structure is lessened, the free exchange of oxygen for the cast-off products of disintegration is hindered and normal function is restrained. The demand is for pure air every hour in every day, all the year, nor should this be advised in a half-hearted way. I find that patients who sleep "out side" soon require less bed-clothing, keep warm more easily and are less subject to "colds" than those who sleep in so-called well ventilated rooms with windows and doors open.

A tent should not be used unless it is floored

and has drop curtains on every side. A damp, close tent is the worst of all places for the consumptive. I like best the porch, where it can be screened in summer and protected by canvass curtains hung at the sides. If there is no roof, an awning may be substituted. Some of my patients sleep on a mattress resting on a hammock, made of barrel staves. A rope may be extended three or four feet above this hammock and a canvas cover thrown, tent-like, over it. The porch, however, is better. Paper or oil cloth should always be placed under the mattress in winter; a light head dress should be worn in cold weather. I can point to over one hundred cases who—to my certain knowledge—are sleeping out of doors summer and winter in our Missouri climate, and not one of them would be willing to change for an inside room. A jug full of hot water may be placed at the feet in very cold weather.

Food. This is a subject that has received much attention and we have many scientific rules and menus for the consumptive. After considerable experience in the feeding of the sick, I must decide against over-feeding. It is not what a patient eats but what he assimilates, that is of value. Thorough mastication is necessary. A moderate lunch of egg and milk or its equivalent, may be given early in the morning and between meals. A varied diet is best, but pies, pickles, etc., should be forbidden except in small quantities, at long intervals. Rapid increase in weight is not desirable. If the patient is gaining weight with three meals a day, it should be enough.

Dress. For the ambulant patient the clothing should be warm, but not heavy, should fit loosely, but comfortably. The lower limbs of women should be well protected by "tights" and "bloomers," but heavy skirts should be avoided. They tire, but do not protect. Much clothing about the chest and neck should be avoided. The dangerous and dirty "chest protector" is happily going out of fashion. If there is need for an additional protection about the chest, a thin silk handkerchief may be placed beneath the under garment.

Home. The one place for the consumptive is home. Home with its comforts, sympathy and care. It is now proven beyond a doubt that patients recover as readily in the Mississippi Valley as elsewhere, provided they live right. Granted a small advantage in some climates, it is not an equivalent for nostalgia, worry, in-

cident to travel or unaccustomed surroundings, not to speak of the physical and financial expense. There is no more need that a consumptive should be exiled than a patient with typhoid fever.

SPECIAL INDICATIONS.

There are some special indications I would speak of. The first of these is:

Fever. The amount of fever does not depend upon the amount of lung involvement as upon its violence. Depending as it does, upon absorption of specific germ activity, the care should be for the lessening of the absorption rather than for the diminution of the fever by ordinary febrifuges. Rest is imperative. Digitalis may be given to aid a weakened cardiac contractility and cold compresses may be placed on head, chest and arms. In a few cases I have had benefit from small, repeated guarded doses of antipyrin. The rapid and feeble pulse of febrile conditions may be improved by digitalis and strychnia with corresponding effect upon the temperature.

Cough. Much of the cough of the consumptive is needless. He should be taught to expel the obstructing masses by slow inhalation and rapid forcible expectoration. Mental control will do much. If there is pharyngitis or laryngitis, it should be treated. Frequently an inhalation of 20 or 30 drops of a solution of equal parts of alcohol, chloroform and ether from an open handkerchief, will answer and is harmless. Opiates should not be given.

Hemorrhage. One of the most dreaded and yet often one of the least harmful complications of pulmonary tuberculosis is hemorrhage. Unless the bleeding is due to the perforation of a large blood vessel, it can generally be controlled by a compress. A wide bandage should be tightly fastened around the chest. A towel should be firmly rolled up like the kitchen rolling pin and forced under the bandage, and over the site of the lesion, mid-way between the outer chest wall. If fastened by safety pin and rightly applied, it will fix that side of the chest and compress the lung enough to stop the bleeding. This seems a dogmatical statement, but the method has been so successful in my hands in over 300 cases of hemorrhage in hospital and private cases, that I now depend upon it. Sometimes a nitrite or small dose of morphia is added but this is seldom needed. The compress should remain in place not less than ten days and be frequently readjusted.

Constipation and Diarrhoea. Often the bowel muscle is weakened and there is accumulation in the large intestine. Sometimes retention and fermentation give rise to diarrhoea. Sometimes there is local infection in the intestine. In any of these cases I have found the enema of normal salt solution valuable. The retention of large masses teeming with intestinal flora among which may be found the bacilli, undoubtedly tends to absorption and consequent high temperature. The normal salt injection removes these masses and seems to have a healthy effect on the functions of the bowel. Its absorption from the bowel doubtless aids in tissue reconstruction.

Medicinal Agents. Much medication should be avoided. Each case should be individualized. I find in cases of the phlegmatic type that iodine, either directly inhaled from a simple hot water bath or used by inunction, is of use. Strychnia should be given where there is a weak heart, with digitalis in small doses if indicated. Arsenic can nearly always be given in one of its several forms. During the last three and one-half years I have learned to place confidence in increasing doses of cacodylate of soda by injection. This should be used carefully. The dose cannot be fixed as some patients are more susceptible than others. I generally begin with one grain in normal salt solution.

Tuberculin. Its value is beyond question in experienced hands, but its danger is great. The class of cases in which its therapeutic use is indicated is the non-febrile or cases with little temperature. Its effect should be carefully watched and guided by the thermometer. When the fever shows that the patient is absorbing his own tuberculin, why add to the burden by adding tuberculin from without?

The question of auto-immunity is very interesting and where it can be encouraged is a solution of the question of recovery. I believe that the large number of the cases over tuberculous glands and evidence of old pulmonary lesions are proof of auto-immunity having been established and arrest accomplished.

I have been much interested (Journal A. M. A., July 15th, 1911, Vol. LVII, pp. 208-210), in some experiments made under my direction regarding this factor in treatment, but the time is too short to discuss them now.

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Analyses, Selections, Etc.

The Cause of Pellagra.

The cause of pellagra is still unknown, but the facts seem to indicate a living parasite and not a poison produced by some saprophyte on spoiled corn or any other food. Sambon (*Jour. Trop. Med.*, Sept. 15, et seq., 1910), has the best of the argument so far and certainly all the facts are explained on his theory that a sand-fly (*simulium*), of one or several species, is the carrier of the unknown protozoon. The disease never appears except where and when this fly abounds, has no evident relation to food, and is communicable in the same sense as malaria and yellow fever. Sambon had previously formed a correct theory as to the cause of sleeping sickness by the same course of reasoning, and his views are, therefore, doubly entitled to respect. But, as in the case of King in malaria, and Finlay in yellow fever, we must wait for proof by experiment. Pellagra is confined exclusively to those who work outdoors near the rapidly flowing small streams which are the habitat of the fly, and nowhere else. There are such places without pellagra, of course, because the infecting agent is absent; as, likewise, there are many places now free of malaria though the *Anopheles* is there. Town-dwellers are never affected nor are country people who do not go near the streams, as the fly never enters a house. As for corn as a cause, the evidence shows that but few corn eaters are afflicted, and that many patients had never eaten it. Cottonseed oil, the latest alleged cause, is not known where the disease is most prevalent. Still, we must remember that only a year or two ago, the facts as to beri-beri were equally well explained on the rival theories of infection and a poison of spoiled rice, and that it turned out to be allied to scurvy—due to the deprivation of something in that part of rice removed by “polishing.” Poor people are mostly affected by beri-beri, because they cannot afford other foods which supply the needed ingredient, but the poor agricultural laborers are mostly the victims of pellagra, because they are the chief ones exposed to the fly and they may be infected in spite of good feeding.

The natural home of the germ of pellagra should not be difficult to find, for the disease

differs from the exanthems caused by pure parasites which do not live outside a human host. The protozoon is probably a tolerated guest or a symbiotic in some lower animal—a lizard, frog or worm—living near the streams and upon which the fly usually feeds—even fish have been suggested as the primary host. We bring the matter up because it is one more proof of the utmost necessity for more study of the parasites or symbiotic guests of animals living in or near water—a field shamefully neglected until quite recent years, but one with promises of abundant harvests. The prospect of ending pellagra would alone warrant the great expense of huge aquariums for research workers, not to speak of the cancer facts to be elicited. Then, think of the possibility of learning something of leprosy, which so commonly attacks those who handle raw fish—not those who eat cooked fish, as Hutchinson thought—and who probably infect themselves by “picking the nose” and thus inoculating the bacilli lurking under the finger nails. The nasal septum, generally, has the first lesions—perhaps invariably. If so, the disease will never be eradicated and we might show that it is not contagious in the slightest degree, and so hard to contract from another case that isolation is not necessary if ordinary care is observed—views secretly held by many physicians who are afraid to antagonize the cowardly popular clamor to isolate for life people who may be harmless. So let us get to work on lower animals to clear up the puzzle of pellagra at once. There are grand possibilities of curing it, whether it is dietetic like beri-beri, an infection like leprosy or a poisoning like alcoholism. We must remember that the vast majority of those who contract tuberculosis recover without ever knowing they were infected and that the same rule applies to leprosy and pellagra, as well as to diphtheria, typhoid and every other infection. Only the few lacking resistance succumb. Now let us cure these few by the same means with which the majority cure themselves, and we cannot find the means until we find the cause. Let us have aquariums for pathological research!—(*Editorial, American Medicine*, October, 1911).

The Significance of Abdominal Pain and the Maladministration of Opium.

Nifong, writing in the *Journal of the Missouri State Medical Society* for July, 1911.

reminds us that the location of the pain is of much significance. We recognize now the classic McBurney's point in appendicitis; the pain and tenderness in the right hypochondrium of a cholecystitis or cholangitis; the deep, gnawing epigastric pain of stomach cancer or ulcer; the acute, sudden pain of gall-stone colic; or the prostrative, ilioinguinal pain of renal colic; or the hypogastric pain of a distended urinary bladder. Also we must be cognizant of referred pains, such as pain in the right shoulder in hepatic affections; a tender point over the lower dorsal vertebræ in duodenal ulcer; pain in the thighs in intestinal and rectal troubles. Then, also, must be noted points of tenderness elicited by examination, as the well-known McBurney point in appendix troubles, or Rovsing's sign, which is pain at McBurney's point produced by pressure over the descending colon. Naunyn's sign of a sore gall-bladder is elicited by hooking the fingers under the ribs over the gall-bladder, a deep inhalation being impossible if the gall-bladder is inflamed. Pain in the kidney may run down the ureter or to the testicle; while bladder pain may be in the end of the penis. Pain from pneumonia or pleurisy may be abdominal, especially in children.

Another point in the character of pain must be mentioned as important—viz., pain at the onset of disease may be diffuse and become local, or *vice versa*. Pain in appendicitis is at first more frequently diffuse and later localizes; still later, after peritonitis begins, it becomes diffuse and general again. Ptomaine poisoning, on the other hand, produces pain well localized in the epigastric region, and later, becomes general and diffuse without the signs of appendicitis. Intestinal perforation gives immediate local pain and later diffuse pain from spreading peritonitis. The relationship of vomiting in acute belly pain is also of importance. Sharp pain preceding the act of vomiting indicates peritoneal infection, while pain following the act of vomiting would point more directly to acute indigestion or ptomaines.

With all the data possible and the most careful study it is oftentimes quite impossible to diagnose accurately, differentiation being so difficult. Is this sudden, severe, deep, epigastric pain, prostrating the patient and making him look so pinched, and anxious, and fearful, a plain bellyache or an acute hemorrhagic pancreatitis, a perforating duodenal ulcer, or a mesen-

teric thrombus? Let us have a care when we say a man has only a severe bellyache. A diagnosis of dropsy is more creditable, for there are fewer conditions causing dropsy than abdominal pain. Let us have a care about seeing a patient with acute epigastric pain and diagnosing acute indigestion from inspection only. Remember that a majority of cases of appendicitis begin in just this way.

Even more careful, if possible, we should be when seeing a case of severe abdominal pain with vomiting. Look for hernia, volvulus, bands, or other causes of ileus. Many conditions might be mentioned producing similar pictures. Usually, however, some factor is present that renders it possible to make a near diagnosis, at least. Thinking of pain produced by such a variety of conditions, many of them so grave, should certainly stimulate one to be very careful and cautious in interpreting their meanings. One should, at least, recognize the fact that abdominal pain is a signal of abdominal distress, and nature's method of warning us of approaching danger.

Such being the case, the author enters his protest against the too frequent use and bad administration of opium in abdominal diseases heralded by pain. It is dangerous for a physician to cover pain signals with a heavy fog of opium—just as dangerous as for a railroad switchman carelessly to extinguish his red danger signal when the train is approaching a wreckage. The author says this advisedly and conscientiously, and pleads for a more careful diagnosis; if diagnosis be impossible, one can, at least, satisfy himself by careful and thorough examination whether the case is of gravity before producing the ever-ready hypodermic syringe.

He urges a careful examination of every painful-belly case, for one cannot be too careful. What may seem to be an attack of indigestion, of no serious consequence, often may prove to be a case of seriousness; and failure to diagnose early may delay recovery or greatly jeopardize life. Also, it is not fair to the consultant to call him to the opium-benumbed patient, and thus handicap him in making a diagnosis. Why benumb with morphine the acute appendicitis patient, making the diagnosis and consent to operation difficult because the patient is easier, thus losing precious time and allowing perforation and peritonitis to intervene?

Used in some case of appendicitis after the diagnosis is made, it is valuable, as it is in many other conditions that produce suffering.—(*Therapeutic Gazette*, October, 1911.)

Dealing With the Sac in the Radical Cure of Inguinal and Femoral Hernia.

There is reason to believe, says H. McClure Young, St. Louis, that the ordinary indirect inguinal hernia is always to that extent congenital that a sac lined with peritoneum persists after the descent of the testicle is accomplished, and that this sac awaits only some extraordinary exertion or some relaxed condition of the parts to receive a loop of bowel from above. In dealing with hernia, therefore the obliteration of this sac must always be insisted upon as the one all-important step in the operation. From this standpoint Young discusses the various operations for inguinal hernia, but says that none so logically answers the necessities of the condition as the one devised by Lexer, which he describes as follows: The skin and aponeurosis of the external oblique are divided in the usual way and the sac freed as far up as the internal ring, where it is ligated securely as high up as possible, but not yet removed. A pair of slightly curved forceps is now passed under the free margin of the conjoined tendon, insinuating them gently upward between the muscle and peritoneum for a distance of about two inches. Here the point of the forceps is pushed forward through the muscle. Into the jaws of this forceps is now introduced the jaws of a second pair of similar forceps, locking them securely and withdrawing the first pair, thus conducting the second pair along the route of the first down toward the internal ring. The loose end of the sac is now clasped in the jaws of the forceps which have been thus placed, and the forceps withdrawn. This brings the sac out through the muscular tissue at a point about two inches above the internal ring. It is pulled upon until the neck of the sac or point of original ligature comes to lie firmly against the posterior surface of the muscle at this point, a thing which requires no great amount of force. Two or three sutures now anchor the sac to the muscle and the redundant portion of the sac is cut away. The Bassini operation may now be performed or any other procedure resorted to which the requirements of the case may seem to indicate. Should the surgeon wish to avoid drawing the sac through the muscular tissue, he

may proceed as follows: Having ligated the sac, he leaves the end of his ligatures long and threads each upon a needle. He then removes the sac, and passes an additional suture through the neck of the sac and again threads each end upon a needle. He now inserts a finger under the free margin of the conjoined tendon and dissects it bluntly from the peritoneum for a distance of about two inches, at which point he passes his needles through the muscular tissue from within outward in such manner that his knots when tied shall lie in a direction parallel with the muscular fibres and about a centimetre and a half apart. The tying of these knots now draws the neck of the sac firmly up against the posterior surface of the muscle. The author says that when surgeons in general understand more perfectly the object aimed at and always to be kept in mind in such operations, the old practice of leaving the neck of the sac at the mouth of the hernial opening to invite recurrence will become obsolete.—(*Interstate Med. Jour.*, October, 1911.)

Book Notices.

Lippincott's New Medical Dictionary. A Vocabulary of the Terms Used in Medicine, Dentistry, Veterinary Medicine, and Allied Sciences, with their Pronunciation, Etymology, and Signification, Including Much Collateral Information of a Descriptive and Encyclopedic Character. By HENRY W. CATTELL, A. M., M. D., Editor of *International Clinics*, etc. Freely illustrated with figures in the text. Second edition. 1911. Philadelphia and London. J. B. Lippincott Company. 8vo. Pages, XVI—1108. Price, \$5.

This dictionary was first published in 1910; three months later a reprint edition was issued, and now—within less than a year—a new second edition, in which the editor makes over 5,000 additions and changes, is presented in response to the large demand. Seventy-one new illustrations have been added, a number of old ones redrawn, and several that seem unnecessary discarded. About 500 new words, embracing expressions to be found in the latest scientific medical literature, and many of which appear in a dictionary for the first time, have been inserted. Besides containing definitions of words used in medicine, dentistry, veterinary medicine and allied sciences, medical biographies are given, capitals and small letters are used in such a way as to make it a guide to capitalization, etc. We note with satisfaction

that no attempt is made to introduce innovations in the spelling of words, but, on the contrary, the tendency has been towards conservatism. The book is handsomely bound in limp leather, and has a thumb index for convenience in reference. We regard this as a most excellent book.

Gathered Leaves. A book of verse made from a Physician's Pad Leaflets. By DR. GEORGE ROSS. Neale Publishing Co., New York. \$1.25, postpaid.

Dr. Ross' wide circle of admirers know what an ardent lover of choice literature—both prose and poetry—he is, and many of them are aware that on occasion he *writes* poetry, and does it, as he does everything else—whether ministering to the sick, lecturing to his classes, or espousing some patriotic or other worthy cause—with rare skill and grace. These beautiful “Leaves,” recording the achievements of the accomplished doctor's poetic pen, will ever be cherished by his friends as a fitting garland for his distinguished “ministry of sweetness and light.”

The Physician's Visiting List for 1912. Black flexible leather, with flap, pocket and pencil, and calendar for two years. Philadelphia. P. Blakiston's Son & Co. Price, \$1.25 to \$2.50, postpaid, according to size.

It seems only necessary to call attention to the issuance of this 1912 Visiting List, and to say that it enters upon its sixty-first year of publication in its usual forms—the Regular, for varying numbers of patients per day or month; the Perpetual, which may be commenced at any time and used until full, and the Monthly, which may be commenced at any time, with each patient's name to be written but once in the month. The emergency data and dose table are thoroughly revised, and up to their usual standard.

Editorial.

The Virginia Doctor and Social Service.

In the report for 1911 just issued by the State Board of Charities and Corrections (a most readable and instructive document) the following quotation from the “Survey” is made concerning the Child Welfare Conference, which met in Richmond on May 22d last:*

“A most significant feature of the Conference was the active participation of a group of

young physicians, who discussed the problems of heredity, pregnancy, eugenics, prevention of blindness, care and feeding of infants, care and training of mothers, and infant mortality from a *social and scientific* point of view.”

That it should be worthy of note or be considered significant, when physicians evidence an active interest in these fundamental problems from a “social point of view,” furnishes a commentary on the body of the profession which ought to give them food for thought. Is it true that the social aspects of the diseased and suffering humanity with which they deal have but little interest for medical men? Do the relationships of the individuals beneath their hands to the great outlying world not stir doctors to action? I would like much to be able to contradict this view, but the facts seem to compel acquiescence. Except for the attendance of those physicians who participated in the discussion as above mentioned, very few of the thousands of doctors in the State came to the sessions of this the first Conference for Child Welfare ever held in the South.

Social Service is to be the slogan of the advancing century, for, if the signs of the times speak truly, we are well on into a world movement which has for its end the solution of many of the age old problems involving the maladjustments of society. The doctor, whose province in the main has been to deal with the consequences of these social disorders, occupies the strategical situation of greatest power, and nothing should be permitted to shake his pre-eminence.

The practice of medicine has so long been simply a matter of tinkering with effects that it is hard for the medical man to readjust his point of view to the serious consideration of the great underlying causes which are responsible for them. This change in point of view must come to him—it ought to come as a matter of initiative, not of compulsion. Many factors in the rapidly changing social structure are crowding the wrongs of society to the fore. The contemplation of these wrongs in all their baldness by the man of average intelligence through the avenues of publicity now so abundant will almost inevitably give rise to attempts at cure, unscientific as well as futile.

That the problems of disease prevention should fall into other hands than those of the doctor, as was more than hinted at in the National

*Proceedings and papers of this Conference are contained in the report of this Board, which may be had on application to the Secretary, Dr. J. T. Mastin, Richmond.

Municipal League recently, is not a matter for professional complaisance. There must be something more than the passive attitude towards public health affairs, so largely in evidence, if the physician is to remain at the helm.

There must be among doctors a more diligent study into the causes of preventable disease, and a more universal and a more active support of prophylactic endeavors.

There must be a wider range of sympathy engendered than at present exists. The doctor must, in justice to the powers within him, lift his eyes from the simple problem of the sick man or the sick child, to the sick State which is contributing by many of its institutions and laws to the burden of disease and death.

He must look beyond the lunacy commission of which he is so often a part to the great underlying causes of the continuous and ever increasing stream of mental defectives and delinquents that people our asylums, brothels and penal institutions. He must lend a voice and hand to the efforts put forth by those who have been grappling for years with these problems.

The terrific havoc caused by the undermining influence of alcohol upon the past and present generations, and which must inevitably impress succeeding generations with its blight, must also become a burden of the doctor's song, if he is to preserve his character as the guardian of the Temple of Health.

These are a few of the many "social" things of wide import which intimately touch the life of every medical man. The Conference of Charities and Corrections, which recently met in Roanoke, dealt exhaustively with some of the more pressing of these problems. The State Legislature, during the coming session, will have an opportunity to apply some constructive statesmanship to solution of them. Every doctor in Virginia worthy of the name ought to make his influence felt for the reform legislation advocated by the State Board of Charities and those working for better labor conditions and better health among the masses of our people.

Cannot the medical societies over the State take definite action with regard to these matters?

Representatives of the people should be made to know that doctors—really and truly, however the evidence may be against them—are interested in the removal of the causes of our social

ills as well as in the treatment of the consequences thereof. ROY K. FLANNAGAN, M. D.

Seaboard Medical Association of Virginia and North Carolina,

The meeting of this Association in Newport News, December 5-7, is now but another of the pleasant memories it is sometimes given the doctor to enjoy. Dr. Clarence Porter Jones, of Newport News, was the presiding officer. In addition to the members and invited guests, representatives were in attendance from the U. S. Public Health and Marine Hospital Service, Army, Navy, and National Soldiers' Home. The papers read were of unusual interest, and were interspersed with a number of entertainments. The largest private entertainment was that given by Dr. Buxton, president of the Newport News Medical Society, at the Elizabeth Buxton Hospital.

Newbern, N. C., was selected for the next meeting in the latter part of 1912. Officers for the coming year are: President, Dr. N. M. Gibbs, Newbern, N. C.; vice-presidents, Drs. J. E. Rawls, Suffolk, Va.; H. W. Carter, Washington, N. C.; George J. Williams, Newport News, Va., and W. H. Hartison, Creswell, N. C.; treasurer, Dr. Israel Brown (re-elected), Norfolk; secretary, Dr. Clarence Porter Jones, Newport News, Va., and orator, Dr. R. L. Payne, Norfolk.

The Richmond (Va.) Academy of Medicine and Surgery,

At its meeting on December 12th, elected the following officers for 1912: President, Dr. A. L. Gray; vice-presidents, Drs. B. L. Taliaferro, R. S. Fitzgerald, and Stuart N. Michaux; secretary, Dr. Mark W. Peyser, and assistant secretary, Dr. E. H. Terrell; treasurer, Dr. W. A. Shepherd; librarian, Dr. G. P. LaRoque, and Judiciary Committee Drs. Wm. S. Gordon, D. M. Mann, C. M. Miller, McGuire Newton, J. S. Horsley, and H. M. Taylor. This makes the nineteenth time that Dr. Peyser has been elected to his present office. The Academy will hold its annual dinner early in January.

South Piedmont (Va.) Medical Society.

The thirteenth stated meeting of this Society, held in Danville on the 21st of November, was called to order by the president, Dr. J. S. Haile,

of Chatham. The secretary, Dr. George A. Stover, of South Boston, was in his accustomed place. The sessions were all attended, and nine of the twelve papers on the programme were read. These, on account of the great variety of subjects discussed, furnished something of especial interest for each one in attendance.

The next meeting, at which will take place the annual election of officers, will be held on the third Tuesday in April, 1912.

The Southside Virginia Medical Association

Held its thirty-fifth quarterly session at Lawrenceville, December 13th, Dr. J. Bolling Jones, of Petersburg, presiding. After the reading and discussion of many interesting papers, a banquet was tendered the Association at the Southern Hotel, at which the president was also toast-master.

The annual election of officers was as follows: President, Dr. J. E. Rawls, Suffolk; secretary and treasurer, Dr. E. F. Reese (re-elected), Courtland; executive committee: Drs. Joel Crawford, J. B. Halligan, and H. B. Mahood. The next meeting will be held in Suffolk during March, 1912.

Pi Mu Medical Fraternity,

The annual meeting of the National chapters of the Pi Mu Medical Fraternity will be held in this city December 22d and 23d at the Westmoreland Club. The annual dinner will be given at the Commonwealth Club on Friday evening. This is one of the oldest medical fraternities in the country, and numbers many representative men among its members.

At the present time Dr. Paul W. Howle, Richmond, is senior councilor; Dr. Charles M. Byrnes, Baltimore, junior councilor; Dr. N. T. Ennett, Richmond, general secretary; Dr. L. T. Price, Richmond, general treasurer, and Dr. Karl Blackwell, Richmond, historian.

St. Elizabeth's Hospital,

Doctor Horsley's private hospital for surgical and gynecological patients will be opened early in January, 1912. Located at 617 West Grace street, in a quiet but readily accessible part of Richmond, the building runs back to one-half block of the Franklin street side of Monroe Park. It is constructed of tapestry brick, Pennsylvania brown stone, and reinforced concrete, and is entirely fire-proof. Every effort has been made to have this hospital modern and

up-to-date, all recently approved appliances for a surgical hospital have been installed, such as silent electric light signals for patients, vacuum cleaners built in the wall, vapor heat, patent Austral windows, and long distance telephone connection in every bed room. The operating department, composed of two large operating rooms, an anesthetizing room, a sterilizing room, and a dressing room, is on the top floor, where it is free from the dust of the lower stories, and is well isolated from the rest of the building. The operating rooms have northern light, and at night are lighted by swinging cranes which carry electric lights, and are swung back by the side of the wall during the day.

Only graduate nurses are employed and a post-graduate school for nurses will be established to give instruction to a limited number of graduates. The staff consists of Dr. J. Shelton Horsley, surgeon-in-charge; Dr. C. C. Coleman, associate surgeon.

The New York Medical Journal

Is to be congratulated upon having secured the services of Dr. Charles E. de M. Sajous as Supervising Editor, *vice* Dr. Frank P. Foster, who died last August, after having served as editor of this journal for over thirty years. Dr. Foster's able editorial work on the *New York Medical Journal* caused it to be ranked as one of the foremost medical journals, and it is safe to predict that under this new management the journal will lose none of its prestige.

Dr. Sajous is too well known for his work in scientific investigation, medical literature and education to need any introduction. We extend him our hearty good wishes.

For Sale Cheap—American Practice of Surgery, 8 volumes, brand new; Goodell dilator; pair bullet forceps; vaginal speculum, and a few other gynecological instruments; one electrical wall plate with faradic and galvanic current with 40 cells when a current is not obtainable. With this goes a Kelly giant vibrator. Apply to R. T. McNair, M. D., Emporia, Va.

Obituary Record.

Dr. James H. Turner,

One of the oldest physicians in the Valley of Virginia, died at his home in Front Royal, December 8th, after a lingering illness. He was about 83 years of age. His wife and two children survive him.

THE Virginia Medical Semi-Monthly.

(FORMERLY VIRGINIA MEDICAL MONTHLY.)

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Original Communications.

THE RELATION OF THE MEDICAL PROFESSION TO THE PEOPLE.*

By J. C. WILSON, A. M., M. D., Philadelphia, Pa.
Emeritus Professor of Practice of Medicine and Clinical Medicine, Jefferson Medical College; Author of a Hand-book of Medical, Diagnosis etc.

Mr. President, Ladies and Gentlemen:

It is a great honor to have the privilege of addressing the Medical Association of the Mississippi Valley upon the occasion of its thirty-seventh annual meeting, and I beg to express to you my high appreciation of the distinction which your President has conferred upon me. The very name of your Association impresses me with a sense of responsibility. We all know that the Mississippi is the longest river in the world; that it is the main stream of the river system that drains the greater part of the United States of America lying between the Appalachian Mountains on the East and the Rocky Mountains on the West—an empire within an empire. We know that your great river extends through the heart of the continent and affords a water-way from the temperate regions of the North to the subtropical climate of the Gulf and that its great tributaries bring to it the riches of a world less glittering, but of far greater annual value than the East poured into Europe through Venice in her palmiest days. We know that this great valley from the earliest days of its settlement, both in the North and in the South, has a most interesting and romantic history, but that no chapter in human history can compare with the story of its magnificent development in recent years, indeed, within the span of a long human life. In that period its wildernesses have become teeming hives of industry, its waste places fertile gardens, its hamlets towering cities, and its whole extent the home of a great and power-

ful population in which learning and science and every gracious art of modern civilization flourish; and those of us who still linger on the Eastern slopes of the Alleghenies and the Atlantic seaboard, are proud to know that in the veins of the leaders of this great movement and their descendants flows the restless, resolute, liberty-loving and God-fearing blood of those who uttered the Declaration of Independence and made thirteen feeble Colonies the foundation of a mighty nation.

But my task to-night is not to tell you of your greatness. It is rather to discuss a homely theme which deeply touches us all. It is very practical and will, I trust, meet the requirement of your President that it should interest alike those of my profession who have honored us with their presence and those of other interests and training. My theme is the relation of the medical profession to the people.

The three professions called learned, that is, divinity, the law and medicine, have in modern times been curiously separated from the people at large. Even the individual members of these professional bodies, while appearing to be in many respects very close to their fellow members of society, show upon critical study a certain curious aloofness which becomes very conspicuous in the aggregate. Manifest to some extent in superficial and external things, this difference between professional and non-professional members of a community becomes impressive and significant when we investigate its actual causes. The clergyman in his robes or in every day raiment of a slightly severe cut, with a manner at once dignified and responsible, shows forth his saintly calling. The judge in his gown, the advocate hastening to court with his green bag, the notary with his seal of office, outwardly manifest the majesty of the law. The snuff box and gold-headed cane are no longer the vogue for doctors, but the most recent member of our guild, fresh from his two years in the hospital, has unconsciously acquired an air and deportment as distinctive as the linen

*Read by invitation, before the Mississippi Valley Medical Association, at Nashville, Tenn., October 17, 1911.

suit and the caduceus, which he wore upon his arm while in service. But there are differences that are deeper and essential. They are the result of the prolonged and more severe training preparatory to professional life, of studious and bookish habits, of the realization of higher uses for human energy than making things and barter and gain, of lofty ideals, of closer touch with the spiritual nature of man. Not only are the professions thus separated from others, but they also differ among themselves and especially in their relation to non-professional persons. Divinity has to do with the religious life of the people and is brought into close and constant contact with all classes of society in the attempt to realize its lofty aims, and the influence and discipline of the Church find a ready response on the part of the people to the means by which they are aroused. The law has in a certain sense perhaps a greater hold, even a closer relation with the whole people than the Church. Without the law no contract is valid, no property can be conveyed, no guilty man punished, no innocent citizen absolved of imputed crime—thus the law and those who have made it their profession are in close and constant relation with the people, and the latter fully realize that there is an impassable boundary between law and anarchy.

With medicine, however, the conditions are wholly different. The organization of the medical profession, but lightly touches the people and the discipline reaches them not at all. They only most remotely comprehend its aims and are incapable of a dispassionate consideration of the means by which it is striving to realize them. They are in no sense bound to it and so long as they are in good health, regard themselves as altogether above and independent of it. So far are they from being influenced by its powers to restore health to the individual and avert pestilence from the community, which must appear in every sense mysterious to them, that they form organizations to undermine the results of scientific investigations concerning the causation and course of diseases and to prevent such investigations. Hence anti-vaccination societies and anti-vivisection societies. It is thus seen that there are many people who are wholly indifferent to the medical profession; some that are actively hostile to it. Those who are indifferent so long as they are well and who at once demand the services of the most experienced and skillful physicians when they are in-

jured or ill, afford material for an unpleasant psychological study. Those who are hostile are influenced by the most transparent motives. They comprise two general groups—the first of which is made up of fanatics and persons of unsound reason and subject to delusions, persons who profess to be healers without any real knowledge and those who are pure charlatans and scamps, but the lines of separation between these sub-groups are not at all sharply drawn. The second group is composed of the dupes and victims of those who constitute the first group. These last, alas, too often have the courage of their convictions and not only pour out money freely, but also sometimes let their children die of curable diseases, rather than accept the services of a qualified medical practitioner. It is creditable to the general common sense of mankind that with so many temptations to practise it, quackery is on the wane.

The history of medicine sheds an instructive light upon the relations between the medical profession and the people. From the time of Hippocrates until the eighteenth century, medicine concerned itself chiefly with results. It knew sickness and death, but it had no means of knowing the causes of these portentous calamities. The teachings of the Hippocratic school were preserved by the Saracens, who added little to the knowledge previously acquired. During the Dark Ages of European history, such healing as was practised was in the hands of the clergy, who united the functions of the physician with those of the priest. With the Renaissance, medicine became again a learned profession and its study was resumed with great activity. The discovery of the circulation by Harvey, and his demonstration of the correlation between structure and function toward the close of the sixteenth century, signalized the dawn of scientific medicine. During all this long period we find a slowly developing knowledge of anatomy, physiology, pathological anatomy, of the symptoms of disease, of epidemiology, of the relations and sequences of morbid phenomena, which we know as the natural history of diseases; but of the causes of disease not an inkling. Demoniacal possession, occultations of the stars, comets, spells and witchcraft, an offended deity were invoked in vain. Hence in the healing art, in therapeutics, nothing but a blundering empiricism. Drugs there were of all kinds, many of them very potent, drastic or sleep-inducing, as the case might require, but

none of them could touch the cause of the malady. And there were charms and amulets and incantations and pilgrimages and votive offerings and the laying-on-of-hands and prayers, but no calamity of plague or pestilence was stayed and no man who was really sick was cured. The conception of disease as a mysterious unknown something that had entered the body of the patient and mostly held possession for a time against all dislodging agencies, however potent and occult, has not yet wholly lost its influence with people of a certain turn of mind and some ignorance, and is largely responsible for much of the hostility to scientific medicine that exists to-day. To such persons, plain, straightforward methods of dealing with disease are an offense and any plan of treatment or any remedy without mystery or occultism, confusion worse confounded. These are the people among whom a catchy name may form a mighty cult altogether without science and with but a travesty of Christianity, or among whom the effort to reunite in one person the mediæval functions of priest and physician has found a favor which appears to be as short lived as it is powerless for lasting good. These are the people who become the ready dupes of organized and unorganized claimants of special gifts and powers of healing, based upon absurd and fantastic pseudo-scientific or spiritual endowments. And these are they who remain in happy ignorance that the transient benefit they experience is the result of the well known and most useful agency in certain disordered psychological states, which is daily used in the scientific management of appropriate cases and which physicians call suggestion.

The history of medicine would be but a series of disconnected episodes were it not that it teaches us that here as in other fields of human endeavor, knowledge ripens slowly and that failures are the stepping stones to success. It teaches us another lesson well worth the knowing and that is that knowledge advances by indirection. There is no reason for medicine except to prevent and cure disease, yet most of the actual workers who made this history in its earlier periods appear to have been more concerned with other matters. The physicians of the Hippocratic school were prolific writers upon philosophical subjects. The Arabian physicians contributed voluminously to the knowledge of astronomy, geometry, logic and metaphysics, while the great anatomists of the Re-

naissance were more interested in the dissection of the cadaver than in getting sick men well. This fascinating history has a third and even greater lesson, and that is that the control of effects can only be compassed by a knowledge of their causes. Thus failure upon failure, the accumulation of knowledge by indirection, investigation of facts for the mere sake of the truth, made the way clear for a new departure in medicine—the study of causes, and, at the beginning of the last third of the nineteenth century, bacteriology, the youngest of the biological sciences, daughter of the genius of Pasteur and Koch, came into being. This event, of transcendent importance, dwarfing all other divisions into insignificance, separates the history of medicine into two great periods—the era of empiricism and the era of science. The boundary between these periods, like that between all great historical movements, is not abrupt. Many great achievements, as, for example, Harvey's discovery of the circulation of the blood and the invention and perfection of the microscope, heralded the coming of the era of science; and the day is not far distant in which medicine shall be wholly free from the numbing influence of the ignorance and superstition which hampered its long prescientific period. But fifty years have not yet elapsed and medicine is revolutionized. As of old, it occupies itself with the individual, because the sick man must be succored and cured; but the single patient is no longer its chief concern. To his interests are added the larger and more important requirements of the community. Medicine has thus become not only curative, but also protective. No possible knowledge of effects could have given us preventive medicine. We owe this to the study of causes, and the means by which they have been and are being studied are bacteriology and animal experimentation. By the scientific and humane methods of laboratory research the nature of infection and immunity has been clearly established, the methods by which particular diseases are transmitted have been revealed, the part played by various insects as direct carriers and intermediate hosts of disease producing micro-organisms has become known and the natural defences of the body against infection investigated. This knowledge has been used in the cure and prevention of the infections with remarkable results in preventing suffering and saving life. There are many examples, but the results of

the work of our army surgeons in Cuba, the insular possessions and the Canal Zone in dealing with so-called tropical diseases are most impressive. The work of the Yellow Fever Commission, carried on by Walter Reed and his associates in Cuba, established the fact that the germ of this disease was conveyed from the infected human being to others by means of a certain species of mosquito and led to the practical eradication of that disease in Havana and other cities of the Island, and from the Canal Zone. Ashford's investigations into the causation of tropical anæmia in Porto Rico, revealed the hookworm as the active agent and led to an enormous reduction of the disease. By systematic and general measures of sanitation in the Philippines, based upon scientific knowledge of the causes of diseases, the prevalence of cholera has been greatly reduced; smallpox has been almost stamped out, the plague brought under control, malaria robbed of its terrors, leprosy greatly diminished, and beri-beri, the scourge of the Orient, placed clearly upon the list of preventable diseases. This achievement in regard to beri-beri, is a notable result of one of the scientific methods in medicine and illustrates the spirit of modern medical research. This disease was long regarded as a neuritis, due to an unknown infection; then as a food disease, arising in some way from rice that had undergone some sort of decomposition; later as caused by a fish diet. Finally, as the result of a prolonged and unremitting search for its cause, conducted by our army medical officers, it has been demonstrated to be the result of the use of polished rice, that is, rice from which the whole pericarp has been removed, as an almost exclusive diet.

We all know what the study of causes has accomplished in the Zone of the Panama Canal under the system of sanitary engineering, organized and maintained by Colonel Gorgas. One of the worst pest infested districts of the world was converted into a healthful region. Yellow fever was annihilated and malaria reduced to a comparatively insignificant disease as regards its prevalence and malignancy. Not less inspiring are the official reports concerning the mobilization of 18,000 men in Texas and California in the spring of the current year in the rainy season. The percentage of sick was less than in the posts from which these troops were assembled. Enteric fever was practically unknown. Compare this record with the awful

reports of sickness and death in Chickamauga and other practice camps in the Spanish-American War. The President of the United States has well said that the expenditure of lives and money in that war and in the discharge of the responsibilities that followed it, are as nothing compared with the benefits to the human race that have accrued from it, and he has congratulated the Medical Corps of the Army and the medical profession at large in having been in so conspicuous a way the benefactors of mankind. These are striking examples of the work being done by scientific medicine. There are many others equally important and far-reaching, but I have briefly alluded to these because they show what has been accomplished in tropical sanitation, under highly unfavorable conditions, because the facts are embodied in the official reports and records of the Government and finally because they cover the short, recent period since the Spanish-American War.

In the study of causes physicians are risking their lives daily both at the bed-side and in the laboratory, and the list of those who have perished in this work is by no means small.

Modern medicine is preventive medicine. To attain its objects, which are the protection of health and life, no effort is too arduous, no problem too difficult. Wherever disease prevails, wherever the death rate is high, it wants to know the cause in order that the remedy may be applied. It busies itself with water, milk, foods of every kind, even the air we breathe. It goes to the school, the mine, the factory, the shop, even to the very homes of the people to correct the faults that menace health and life through ignorance and neglect. It invokes the law that people may be protected from themselves and from each other. It is in the highest sense educational. It invites reasonable criticism of its methods and results. It would have the interested co-operation of those who reap the benefit of its work. There is and always will be plenty for it to do—always perhaps until that millennium to which the ardent disciples of Metchnikoff look forward when, infection being ended and the forces which make for senility minimized, there will be no sickness, old age will be enjoyable and death nothing more than a gentle turning over for a longer sleep.

THE TREATMENT OF TUBERCULOSIS IN THE HOME.*

By JOHN J. LLOYD, M. D., Catawba Sanatorium, Va.
Resident, Physician, Catawba Sanatorium.

For the successful treatment of tuberculosis, three things are necessary, viz.:

1st. An early diagnosis.

2nd. A thorough realization on the part of the patient of his or her exact condition.

3rd. Perfect accord between patient and physician.

The prognosis for recovery depends so largely on the time at which treatment is commenced that we should constantly be on the lookout for tuberculosis, so that treatment can be instituted before the disease has made any great headway. If treatment is begun in the incipient stage, the percentage of recovery is from 70 to 80; in the moderately-advanced, it is twenty; and in the far-advanced it is very small. The decrease in the rate of recovery as the disease progresses is very striking and is the great incentive for early diagnosis.

There are many patients who are denied the chance for recovery by physicians failing to impress upon them the gravity of the situation in the beginning. It is denying a patient his best chance if we do not tell him frankly what his trouble is. At the time of diagnosis is the time for a full talk with the patient, explaining to him just what the disease really is—that it is curable, but as it is a chronic disease the healing process is necessarily a slow one and the treatment requires an infinite amount of patience, waiting, and "sand."

If it is so fully explained that he understands that his disease is one tending to recovery, but attended by frequent relapse, and that it will require all of the energy and courage he can command to regain his health and keep it, then we have arrived at the point where treatment can be begun. But to undertake the treatment of a patient who does not realize the gravity of the situation, or who will not do his part, is an almost hopeless task.

Rest, food, fresh air, and exercise are the essential features in the treatment.

Rest comes first, for it is by far the most important in the majority of cases. Absolute rest in bed is indicated when the temperature rises daily to 100° F. or higher, or whenever the temperature reaches 100.6° F. Rest on a recliner or on the bed should be insisted upon

when the temperature rises to 99.6° F., but if it rises no higher it does no harm for the patient to be up and dressed and attend meals.

With a continued pulse of 110, or higher, patients should be confined to bed, and no exercise allowed if the pulse is over 90 with the patient at rest. Rest in bed will overcome active symptoms of tuberculosis more promptly than will any other measure or measures, and whenever we encounter in the treatment of tuberculosis symptoms which persist in spite of the routine rest hours in the recliner, they will usually yield to absolute rest in bed. Sweats disappear, digestion improves, and cough is very much lessened by a stay in bed of a few weeks. Rest every minute possible, excepting the time specified for exercise, is the best rule.

In regard to food, the time for stuffing tuberculous patients with milk and eggs has passed. Three meals a day of a generous, wholesome, and nourishing diet, such as is found in the better class of homes, with one glass of milk at each meal and one between meals and at night is sufficient, and is all that the majority of digestive organs can assimilate.

Tuberculous patients frequently have poor appetites or no desire whatever for food, and they are often subjects of indigestion in its various phases. These patients have to be encouraged to eat, even if food is totally revolting or if they suffer slight discomfort after eating. Many will insist they cannot touch milk, but there are in fact, as we all know, very few who cannot if they will, and milk is the food par excellence for the tuberculous invalid.

Fresh air is so plentiful and cheap that we have very little difficulty in obtaining it, but we often meet serious opposition in persuading the patients to avail themselves of it. A covered porch protected by curtains in case of severe storms is all that is necessary, but this porch should have opening off of it a warm dressing room.

The "cure" is not so arduous if the patient has a comfortable place in which to dress and undress, and where he can go during the day to get warm in bad or cold weather.

By sleeping out doors it is possible for a person to spend twenty hours or more daily in the open air while taking the cure, and while a patient is running active symptoms this should be our aim.

The above outline applies to patients suffering from acute symptoms, and who have to be

*Read before the South Piedmont Medical Society, at Danville, Va., November 21, 1911.

treated just as though they were suffering from an acute illness; later on, after they have improved so that the temperature and pulse have been normal, or slightly above, for two or three weeks, we can begin exercise in moderation. A beginning of fifteen minutes slow walk on level ground morning and evening for a week and gradually increased to one or two hours twice a day is the safest plan of procedure as this is the time of gravest danger. The patient feels as well or better than for months and quickly forgets the fact that he is not in vigorous health, and he may over-do his strength and produce a spread-out with renewed active symptoms.

After a patient can take four hours exercise daily with no bad result, it is usually safe for him to return to work, provided he will take care of himself outside of work hours. Go to bed immediately after supper, and if the week has been a hard one, stay in bed all day Sunday so as to catch up. A person who has once had tuberculosis cannot safely work during the day and frolic any after work hours until all activity has been absent for years.

It is well to make out for the patient a schedule for the day so that he will have a definite plan to work by, and I should suggest such a schedule as the following:

7:30 A. M.—Cold sponge bath in a warm room.

8:00 A. M.—Breakfast.

8:30 to 9:30—Rest on a reclining chair out doors.

9:30 to 11:30—Exercise or rest.

10:30—Nourishment.

11:30 A. M. to 1:00 P. M.—Rest on recliner.

1:00—Dinner.

1:30 to 4:00—Rest on bed.

4:00 to 5:30—Exercise or rest.

4:30—Nourishment.

5:30 to 6:00—Rest on recliner.

6:00—Supper—after supper light recreation.

8:00—Nourishment.

9:30—Bed—sleep out doors.

A schedule such as the above, which is the one in use at Catawba, modified to meet the individual case, will be of infinite value to both physician and patient.

Unless an occupation is obviously injurious—one in which there is heavy physical labor, exposure to much dust, or irritating chemical fumes—it is better to advise the patient to return to the work which he knows already and at

which he can earn the best livelihood. The worry attendant upon learning a new job, or starting all over for less money is not advisable. There are some patients whom we are called on to treat, who of necessity have to continue at work. We can teach these patients the means of taking care of the sputum and destroying it and how to always cover the mouth when coughing so as to avoid any risk of infecting their fellow laborers. We can also teach them the importance of rest and have them go to bed as soon as they reach home after work, and remain in bed on Sundays and holidays. They can take extra nourishment, at least with meals and at night, and arrange some way for sleeping out, and often this will enable them to keep up.

The fear of the general public toward tuberculosis has rendered it exceedingly difficult for the man who has once had the disease to earn his living. This consumption terror is wrong and unjust, and we as physicians are the ones to explain the injustice of it and educate the public to distinguish the real from imaginary dangers.

In the treatment of special symptoms there are no specifics, and we will deal only with a few of the more important and troublesome ones.

The appetite and digestion may be helped by bitter tonics, hydrochloric acid or the alkalies.

Cough, if distressing and not yielding to rest out of doors, can be made bearable by heroin or codeine in small doses. The sweet cough mixtures are objectionable on account of the tendency to upset digestion. Cough, especially the dry unproductive cough, can be largely controlled by voluntary effort on the part of the patient.

Streaked sputum should call for twenty-four hours rest.

A hemorrhage is alarming to the patient and his friends and is often productive of grave results. Absolute rest and the use of the vasodilators, amyl nitrite for the immediate effect and either sodium nitrite or veratrum viride for continuing the action, are our best agents. If the patient is coughing much or is nervous and excited, morphine hypodermically in small doses, 1-8 or 1-16 gr., is indicated. This must be repeated as often as required, but should never be used in doses large enough to stop cough altogether. We want the blood expelled, but do not wish unnecessary cough.

Calcium lactate in 15 to 20 grain doses t. i. d. is apparently beneficial.

Soft, cold diet, with a limitation of fluids, is advisable, and the bowels should be opened daily with a saline.

The patient should be kept in bed forty-eight hours after all fresh blood has disappeared from the sputum and not allowed to be up and dressed until all discoloration has been absent several days.

Night sweats will usually cease promptly after the out-door life is commenced. Agaracin in 1-10 grain doses every three hours, or aromatic sulphuric acid in X to XV minim doses, t. i. d., will usually suffice. Should these fail, quinine sulphate and tannic acid, of each grains III, acts well at times. A cold sponge on arising is a splendid preventive measure both for sweats and for catching cold.

The treatment of intercurrent conditions we meet every day in our practice, and need no comment here.

The two points which I wish to emphasize in this paper are:

First. The value of absolute rest in the treatment, because it will often change an apparently progressive case into an arrested one and give patients a chance for recovery who are doomed if they be treated as ambulant cases.

Second. The importance of a full knowledge on the part of the patient of his condition. It is impossible to have the full co-operation of the patient unless he knows that he is dangerously ill and that all the details of the treatment have to be complied with in order to obtain the best result.

TONSILLECTOMY.*

By L. T. ROYSTER, M. D., Norfolk, Va.

It would certainly appear from the amount of literature which has been written on this subject, that the last word had been spoken; however, I wish to give what seems to me to be the essentials of a successful operation on the tonsils in children.

*In the beginning I wish to discourage the prevalent idea that this is so simple an operation that it can be done by anyone, anywhere. There are few operations which require a more careful technique, or the preparation for that serious complication, hemorrhage, more than tonsillectomy.

The first requirement is therefore a careful and experienced operator, and the second is that the operation should never be performed anywhere except in a hospital.

The operation should always be done under a general anæsthetic, ether being employed. The patient should be thoroughly anæsthetized before commencing the operation and kept so until we are sure there is no serious after hemorrhage. To secure this continuous anæsthesia, I think the spray method of administration preferable, and during the actual operation this may be maintained by the use of a tube in the mouth. The whole operation, including adenectomy, may be done in a very few minutes, but I see no advantage in such haste, as it rather conduces to great danger.

The first step in the actual operation is the separation of the pillars of the fauces from the capsule of the tonsil. This may be done in two ways: By the use of the Leland knives, by cutting the capsule of the tonsil from first the anterior and then the posterior pillars, changing the knife at each step of the operation. This is a good method and may be done very quickly by an expert without much danger, and may be done with or without a tenaculum.

The method which I prefer, however, is as follows: Grasp the tonsil in a tenaculum forceps and pull out into the fauces. I then take a sharp-pointed small-blade curved bistoury and by the gentlest pressure possible *split* the attachment of the capsule and pillar, either with one or two strokes. When tension is made with the tenaculum the line of capsular attachment is very plainly visible. The tonsil is then peeled out of its fossa in its capsule of course, either by the finger or a spoon-shaped separator, which latter method I prefer, since it can be done quicker and I believe with less trauma. The tonsil is then cut off at the base with one of the various forms of snare. The one I use is Eve's. This ends the tonsillectomy, but not the operation, for the most important part is yet to come.

Just as soon as the tonsil is removed the patient is turned on its side and the blood allowed to run out of the corner of the mouth. In a very few seconds in the greater number of cases this ends the bleeding, and unnecessary sponging in the fossa should be avoided. Not infrequently we have one or more bleeding points, and sometimes a spurting artery; these are best handled by ligating at once, so that the patient leaves the table with a dry faucial space, and

*Read before the forty-second annual meeting of the Medical Society of Virginia, at Richmond, October 24-27, 1911.

not one which bleeds for several hours thereafter.

In cases when there is general ooze in the tonsillar fossa, we have the most annoying of all complications. These cases will necessitate suturing the pillars together with two or more sutures, sewing in the fossa a pad of gauze, which fills it sufficiently to exert even and firm pressure. Whether a needle and holder are used or a needle on staff is a matter of personal choice; the needle itself, however, should be a small, round one, and not one with cutting edge.

The patient should be returned to bed, placed on his side or face, and watched carefully for several hours, and never left alone. He should be watched by one who is capable of examining the throat, which should be inspected frequently, to see that there is no unusual bleeding. The pulse should also be counted as a further check on possible hemorrhage.

I cannot condemn too severely the custom of doing this operation in a dispensary under local or no anæsthetic, and sending such children home with probably no after-care.

FURTHER REPORT OF CASES TREATED WITH SALVARSAN.*

By LAWRENCE T. PRICE, M. D., Richmond, Va.
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Before the Tri-State Medical Society which met during February of the present year at Raleigh, North Carolina, I reported nine cases which I had treated with salvarsan. Since that time I have treated thirty-four others. Of the forty-three cases, two were in the primary stage, twenty-one secondary, nineteen tertiary and one for Hodgkins' disease. Seven of the secondary cases still had the primary sore. Eleven were injected intramuscularly, thirty-one intravenously and one subcutaneously.

The method of mixing the drug was the same in all cases except the first five when I used one c.c. of methyl-alcohol to dissolve the salvarsan. I found by accident that the compound would dissolve just as completely in warm water, and, therefore, discontinued the use of the methyl-alcohol because of various reports of untoward results due to it.

For the intravenous administration I diluted

up to 250 c.c. with sterile water, using an ordinary saline intravenous container. At first I used a sharp pointed needle, and attempted to enter the vein through the skin, later exposing the vein and finally dissecting it out. I found the needle unsatisfactory, however, for the reason that I sometimes ran it through the vein and the solution would be deposited in the surrounding tissues, which would cause a slow healing wound. The needle was therefore discarded and an ordinary intravenous blunt pointed canula used in its place.

The cases injected intramuscularly had a very decided reaction which lasted from three to five days, whereas the intravenous cases were practically over the reaction in twenty-four hours. The reaction consisted mainly of nausea and vomiting, a slight chill and a rise of temperature of from one to two degrees.

In no case was there any untoward result or a fatality, and in every case but one there was either an improvement or a complete clearing up of the symptoms. Lesions situated upon the mucous membrane surface showed a more marked and rapid improvement than those situated elsewhere. Unfortunately I have not had a Wassermann made on all cases treated, but have in twenty-seven, twenty-three giving a negative reaction, the blood having been taken in periods varying from two weeks to four months. To the four with positive Wassermann tests I administered a second dose.

I will take up a few of the more interesting cases and call attention to the special points which the subject justifies.

Case 4.—W. S. M., male. Age 39. Married. Infection November 25, 1910. Came under observation January 8, 1911. At that time a mixed sore was on penis, very marked general adenitis, macular and papular syphilides, mucous patches in mouth and pharynx, alopecia, intense general pains and temperature; a general picture which predicted a malignant case of syphilis. 0.6 grams of salvarsan administered intramuscularly. All symptoms were cleared up in eleven days when case left the hospital. Negative Wassermann on the tenth day. Patient had continued internal treatment constantly, and when heard from a few days ago, had had no trouble of any kind.

Case 6.—H. O. Male. Age 21. Infection January, 1911. Seen on January 31, 1911. Had a large chancre on upper lip; spirochæta pallida present in large numbers. 0.6 grams

*Read before the forty-second annual meeting of the Medical Society of Virginia, at Richmond, October 24-27, 1911.

of salvarsan administered subcutaneously. There was a marked cellulitis around the site of injection which did not subside for two weeks. Chancre disappeared by tenth day. Has been taking internal treatment ever since. No evidence of any trouble developed after the administration of salvarsan.

Case 9.—A. O. B. Male. Age 37. Infection January, 1907. Treatment was begun on appearance of secondaries; had had continuous treatment, together with three visits to the Hot Springs, Arkansas, three months each for treatment. When he presented himself the nasal bones were practically destroyed by a gummatous condition. 0.6 grams of salvarsan administered February 25, 1911. The lesion was clean in two days and healed in eight days. Wassermann taken September 20th was positive, though no lesion of any kind was perceptible. 0.5 grams of salvarsan administered September 28, 1911, intravenously.

Case 11.—C. B. M. Male. Age 30. Had a most marked case of Hodgkins' disease. 0.6 grams of salvarsan administered intramuscularly. No change in the condition of the case was noted until about four weeks when he began to get rapidly worse and died about two months afterwards.

Case 14.—N. G. Female. Negro. Age 22. Eight and a half months pregnant. Was sent to the Memorial Hospital in March for an obstetrical clinic patient. Patient denied history of infection, but there was a condylomatous growth on the vulva eight inches long, three inches wide and three and a half inches high. She was delivered of a healthy infant. Seven days afterwards I gave her 0.6 grams of salvarsan intramuscularly; the condyloma gradually diminished and when last seen, six weeks after the administration, three small cicatricial elevations about the size of a match head were the only remaining evidences. The infant nursed from the mother's breast all the while and apparently had no untoward results from the salvarsan.

Case 22.—Mrs. C. H. White. Female. Age 34. Infection twelve years ago. When seen in May, had very extensive mucous patches in vagina, condylomata on vulva, perineum and around anus. She had had mixed treatment at irregular intervals for several years, and six weeks prior to my seeing her had been given an intramuscular injection of salvarsan. Hard,

indurated masses were still present in both buttocks where the injections were made. I administered 0.6 grams of salvarsan intravenously. Patient was under observation for three weeks thereafter, but no appreciable clearing up of the lesions could be noticed. Four weeks later, through her physician, I learned that the lesions were in the same condition and that abscesses had developed in both buttocks. This was the first case in which the lesions did not clear up, and I attributed this to some irregularity in the dispensing of the first dose, through the absorption of some part of it, causing an antibody of some kind which brought about an immunity.

Case 38.—Male. White. Age 37. Infection June, 1911. When seen September 20, 1911, patient had lost forty-two pounds in weight, had mucous patches in throat and on tongue, loss of hair, profuse papular and pustular lesions generally distributed over body and limbs, marked adenitis, intense nocturnal pains and was very nervous. 0.6 grams of salvarsan administered intravenously. When seen on October 19th, had gained twenty-two pounds in weight, mucous patches well, no pain, hair had stopped falling out and the lesions had disappeared but for the discoloration of the skin.

Conclusions.—From an observation of forty-three cases, of which the seven cited are examples, I have arrived at the following conclusions:

1st,—That the original impression of the profession that a specific for all cases was vested in salvarsan is erroneous;

2nd,—That in certain cases salvarsan had no appreciable effect upon the disease;

3rd,—That in certain cases salvarsan did produce results in clearing up lesions which would not respond to any other treatment;

4th,—That by the combination of mercurial medication or mixed treatment with one or more doses of salvarsan in cases amenable to salvarsan, the course of the disease can be materially shortened;

5th,—That no report on a Wassermann should be considered definite unless an interval of at least seven or eight weeks had elapsed since treatment of every kind had been discontinued;

6th,—That it is immaterial by which method the drug is administered as long as the case is one which is amenable to its use;

7th,—That the results can be accomplished best by not using any reagents other than sterile water and normal sodium hydroxide in dispensing.

301 East Franklin Street.

SOME REMARKS ON RAILWAY INJURIES AND THEIR TREATMENT.*

By CHAS. W. DOUGHTIE, M. D., Norfolk, Va.

We have all known surgeons who apparently were "to the manner born"; few of us have seen railway surgeons who hailed from that happy estate. There are four essential factors, which, in addition to educational qualifications, form the composite of the latter—experience, good judgment, eternal vigilance and persistence.

In reviewing our kaleidoscope of varied results with a large number of railway injuries, we have all been impressed with the aforementioned fact when we have seen most excellent surgeons, having had little experience in railway surgery, attempt, for instance, the treatment of an extensively lacerated and contused limb. I would not for one moment discount the ability of the general surgeon in the extolment of the railway surgeon. In every day accidents he may be far superior to his colleague, the railway surgeon, but our discussion does not make ready acknowledgment of his several abilities till we discover in him the ear-marks of experience, which, I might add, is the father of good judgment.

We do not awake to find ourselves railway surgeons, nor does the duplicate of our contract, together with our annual pass, constitute a proper qualification. We attain to the above only through a most inglorious travail; we are unwilling *particeps criminis* from time to time to traumatic gangrene; we see our fond surgical hopes shattered in ununited simple fractures, which apparently are due only to the perversity of nature; we find large black sloughs on apparently perfectly healthy flaps and the like without limit. We obtain the most deplorable results and are threatened with suits, and charged with being "butchers," not surgeons. After a series of good surgical results we begin to secretly congratulate ourselves on our surgical skill and judgment. Be well aware, however, that some day, if you continue your ministrations, your rare surgical judgment will pale

into insignificance, when on the day following the treatment of an apparently simple contusion of a limb you are horrified to find it gangrenous.

The treatment of railway injuries differs as widely from the treatment of similar injuries of a different incidence as does their prognosis. This fact is due to several causes. Rarely do we find a railway patient who has even a suspiciously clean skin; generally it is covered with grease, grime and horribly soiled clothing, which not infrequently is forced into the injured member. To this condition we have added a generous amount of coal dirt and earth, if the accident is a precipitate one. The most telling factor for disastrous results is the violent trauma which nearly always causes or accompanies this class of cases.

One can never estimate the extent of a traumatic injury, but must base his judgment not upon any correct and adequate knowledge, but upon "give the patient the benefit of any and all doubt," then some more. Still another pernicious factor may be found in the not infrequent handling of the wounds and in the application of soiled dressings by their good Samaritan friends. This condition is to some extent being obviated by education of employees, through our department, in the first aid to the injured.

I have found the iodine treatment, which has become such an indispensable method in abdominal surgery, to be of equally as much value in the treatment of all forms of injuries, especially in the treatment of minor injuries of the hands and feet. We have found that iodized sutures when introduced through a reasonably clean skin rarely if ever are an atrium for stitch hole abscesses. The reason assigned is that iodine is a specific against the staphylococcus family which inhabits the skin. This being true, we next are forced to conclude that iodine when painted over the dry skin and there allowed to dry penetrates into the hair follicles, oil ducts and other surface inequalities, sterilizing the entire area to which it has been applied.

My preliminary treatment is, if the skin be greasy, to use benzine for the removal of the grease and with it the grime and dirt. The benzine rapidly evaporates, leaving a dry skin, which I paint with a fresh tincture of iodine over an area well external to the wound, using a swab of cotton or any kind of applicator

*Read before the Association of Surgeons of the Norfolk and Western Railroad, at its fourth annual meeting, at Richmond, Va., June 25-16, 1911.

which happens to be handy. I then allow this to dry, after which I am ready to proceed in the usual surgical manner.

Punctured wounds are well treated, after preparing the skin as above mentioned, by more generously incising the skin at the point of entrance in two directions, having first touched the margins to be cut with pure carbolic acid as a local anæsthetic. I then introduce a probe wet with carbolic acid to the bottom of the nail wound. I repeat this procedure if I do not feel satisfied that the swabbing has been thorough. I then introduce a bit of packing to prevent the edges from uniting, thereby preventing an air-tight cavity in which the tetanus bacillus might find a comfortable and agreeable lodgment. After this I apply a generous wet dressing of a one per cent. solution of carbolic acid or 1-3000 bichloride of mercury. In the course of two or three days it is generally safe to allow the skin opening to close when thus treated. If the nail which produced the injury is not a new one, and particularly if it was from a stock car or from the earth, as an extra precaution it is advisable to give a dose of tetanus antitoxin as a preventive measure.

Lacerated wounds are usually dirty, irregular, and contused about their edges, having been produced by a blunt instrument to which was added unusual force. The surrounding skin should be cleansed in the usual manner; the wound should be sponged clean of debris and blood clots; edges sutured with iodized silk-worm gut or silk by the interrupted method. The point is to use not one suture more than is necessary; to avoid undue tension in making apposition and, if the wound is oozing freely, to lay a silk-worm suture into the floor of the wound and let an end emerge from the most dependent angle. This provides drainage and does no harm when not needed, if so proven by subsequent development.

Contused wounds do well when put at rest with a continuous wet dressing of Burrow's solution, one part in six, having first cleansed the skin. The dressing is inexpensive and may be used until the swelling and discoloration subside. Clean incised wounds may be closed after painting the surrounding margins with tincture iodine and flooding the wound with a 1-3000 bichloride solution, and by using very narrow strips of zinc oxide adhesive plaster placed at a distance about the same as sutures. The skin must be dried with a piece of gauze,

the hair being removed before applying. If the plaster is clean, it is unnecessary to sterilize it. Care should be exercised, however, not to contaminate same by handling, and under no circumstances should one cover the entire wound with one wide strip, as by so doing there is no possible way for the serum, which always exudes to a greater or less extent, to escape. Over this may be applied the usual dry sterile gauze dressing. Injuries of this character about the face frequently do best without a protective dressing, as the exuded serum upon coming in contact with the air dries and forms an occlusive dressing. A very important reason for using the "plaster sutures" in face cuts is that they do not leave stitch hole marks and, consequently, do not disfigure to greater degree than is necessary. Scalp wounds, as a rule, heal kindly and only require that the hair be shaved and wound cleansed, sutured and sealed with a dressing of flexible collodion on a thin pledget of cotton, unless very extensive when a large protective dressing may be required.

Violent traumatism of a limb should be observed for a few hours before attempting surgical procedures, other than cleansing. Heat should be applied. We should watch carefully for circulation as evidenced by arterial pulsation, return of warmth and color. Every surgeon desires to avoid an amputation, and should it become necessary, to save his patient every possible inch, and at the same time leave as useful a limb, or part thereof, as possible.

The question arises in compound comminuted fractures, "What shall I do with this limb?" A surgeon, regardless of consequences, decides to make an effort to save it, while he at that moment is convinced that he is entering upon an arduous task and half convinced that an amputation is a procedure which is most indicated. After laboring for weeks, the ingrate finds some shyster lawyer who informs him that he has been butchered and advises him to bring suit forthwith for a large sum of money. The patient now intoxicated with his new financial prospects and with a mind inoculated with venom, nurses his illusion until he comes to hate his benefactor and to believe that his case was not skilfully handled. In other words, because he has not a limb such as was given him by his Creator, he assails the reputation of the surgeon who has spent weeks in his behalf, endeavoring to save him from chronic invalidism. While of rare occurrence, yet it is still at times

true that a colleague will criticise a result, if not directly, by implication, and that too when he has no knowledge of the condition which confronted his confrere. It would be well to remind that colleague that "whatsoever he sows, that will he reap," even though years elapse before his harvest. We can never be too careful in expressing an opinion of a result to an injured patient, who comes seeking some chance uncomplimentary remark, which he is sure to use, if for no personal gain, to the detriment of his attendant.

There is one cardinal principle in the treatment of railway injuries that should be well learned, the principle of drainage. When one learns when to drain, how to drain, where to drain and when to discontinue drainage, he is far advanced along the road to success. The value of drainage can scarcely be over-estimated in our work.

If we have to deal with an active infection free drainage is essential to success. This may be accomplished by removing all sutures, if sutures there be; by free incision and the insertion of an ample drainage tube, or packing the wound lightly with plain gauze strips. When drainage has been finally reduced to a minimum, it should be promptly discarded, the wound swabbed or flushed with a ten per cent. solution of tincture of iodine and loosely packed until granulations force packing out. When the wound is again clean, the less frequent the dressing, the more prompt is the cure.

Drainage as a precautionary measure may be accomplished in many different ways, according to character and location of wound. The fenestrated draining tube of large size is undoubtedly the thing in draining a stump after amputation. It should be so placed as to extend beneath the cellular tissue, and protrude one from each angle of the united flaps. This is only necessary from twenty-four to forty-eight hours, when it may be dispensed with and a narrow wick of gauze lightly inserted through the angle.

In small wounds a few strands of silk-worm gut well placed in the bottom of the wound, and emerging from one angle, may prove an excellent method. The wound can in this way be tightly sutured, and the drainage strands removed when there appears to be no necessity for their longer remaining. The sutures are thus undisturbed and the wound heals by primary union.

The rubber tissue wick is useful for draining for twenty-four hours a small wound, because it is small and admits of more closely coaptating the edges and it may be removed without doing damage to the sutures, the edges of the wound falling together and promptly uniting as would have been the case without drainage.

In small amputations, about all the drainage that will be found necessary may be procured by not attempting to coaptate too accurately the flaps. In other words, we should leave something for nature to do, for nature is extremely restless and demands that she be not ignored. She is an indispensable ally—one whose favor will always be courted by the wise surgeon. Not infrequently nature does the work and the doctor draws the pay. The same method of suturing should be used in large amputations, or one is sure to be disappointed. Undue tension on sutures will produce a tissue necrosis and coincident sloughing.

The first evidence of redness about a wound, accompanied with pain, should always demand the removal of sutures at once, in order that by separation of the edges of a wound we may procure prompt drainage; by so doing we avoid having entire flaps to slough as well as having the patient profoundly septic.

Should the flaps turn black, separation of the sloughs may be facilitated by applying a dressing wet with a fifty per cent. solution of enzymes. I have been in the habit for years of using enzymol and have never been disappointed in it. When the slough separates and is removed, healthy granulations may be stimulated by the ten per cent. iodine method, or the use of balsam Peru. If granulations become too exuberant, they may be cut down very promptly by using a pencil of pure caustic, controlling its action with salt water.

In selecting the point for amputation, even the best judgment frequently proves disappointing in traumatic injuries. The skin looks normal above the injury and one attempts to save every inch, but often the trauma has done damage well above the apparent site. I do not believe it is a bad idea to wait a few hours and watch the situation, at the same time treating the shock so as to better prepare the patient to withstand the operative procedure.

Should operation be determined upon, the surgeon should relax the tourniquet after making flaps and observe the bleeding. If there is

not free bleeding, he should go higher up the limb until he reaches living tissue, as manifested by hemorrhage. The tourniquet may be quickly tightened when we have once made a decision. The operation may then be completed in the usual manner.

One should be careful to see that all limbs are well padded before bandaging, and never should a bandage be tightly applied soon after an injury, as such may become a constrictor when the limb subsequently swells. After recent traumatic injuries, the limb should always be kept elevated.

Cellulitis, as evidenced by pain, swelling and redness rapidly extending up the limb, should be treated by prompt and free incision at such various points as may be necessary to provide adequate drainage. This should be supplemented with mild wet antiseptic dressings.

Bacterins are useful for controlling these infections if we can determine the particular variety of causative germ. If one is unable to accurately determine this, it is then considered a wise procedure to administer the mixed bacterins (composed of staphylococci and streptococci).

Sprained ankles may be rendered immediately useful by the ambulatory method of treatment. The limb is shaved and strips of zinc oxide adhesive plaster are applied—four strips, two feet long and three-quarters of an inch wide, should be cut, and four strips of the same width and about nine or ten inches long. The foot should be strongly everted; a long strip should then be stuck in position, beginning on the external surface of the leg about ten inches above sole of the heel and passing at a point posterior to the malleolus, thence under heel and up inner surface of leg to the same level; a short strap should then be placed, beginning on the dorsum of foot at a point about the posterior third of the metatarsal bones and extending diagonally around heel to point of beginning. Each strap is alternately followed by another overlapping the former about one-third of the width after the fashion of tiling. The foot should not be fully incircled, nor should the plaster be applied where there is much swelling. In other words, if the patient is seen before the swelling occurs, the straps may be applied; if later, elevate the limb and apply liquor Burrow dressing till swelling subsides, then strap. Straps are permitted to remain until they wear loose, being reapplied if required.

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DOCTOR MOSES.*

By THOMAS W. MURRELL, M. D., Richmond, Va.
Professor of Dermatology, University College of Medicine.

"All work and no play makes Jack a dull boy," and the busy physician has his right to recreation. There is no more edifying reading than biography, and we may pass a few moments pleasantly studying one side of a man, in the writer's opinion, the greatest who ever walked the earth.

Moses, the leader and tribal law-giver of the Children of Israel, was a many-sided man and, judged by the measure of his success, great in every role he undertook. We sometimes, however, are prone to give to one man the credit of everything he does; he may be but the product of the civilization from which he evolved.

The Children of Israel were, in every sense, a mob of the lowest dregs of humanity, since years of slavery and constitutional bondage had deprived them of everything that the world then had. But though a Jew in nationality, educationally, Moses was an Egyptian gentleman.

The civilization of Egypt was, at that time, the highest the world presented and was a civilization in all that the word implies. In other words, a race of people had within themselves evolved a literature, laws and an art of no mean calibre. We may think ourselves, as the latest product of the greatest of civilizations, far above the men of ancient days, but the brains that planned the pyramids and the tremendous temples that bordered the Nile on either side, were intellects to be respected, and they did many things that stand as miracles in modern eyes.

Like many ancient civilizations, the Egyptian was cursed with a division of society into castes. The highest of these were the royal family and priest castes; below these stood the warriors; next came the farmers and lowest of all the slaves. The Children of Israel were the lowest of the slaves, but Moses was educated as a partisan of the royal family and a member of the priest caste. As such, he received education in constitutional law, and particularly in the art of healing, which was a practice entirely relegated to the priests. Whether the hygienic laws that Moses imposed upon the Israelites were the reflex of his education, a product of his own mind, or the inspiration of the Deity is a view on which men may differ, but it seems patent to the judicial, though rev-

*Read before the Southside Virginia Medical Association, at Lawrenceville, December 13, 1911.

erential mind, that there were times when Moses attributed things to God because they were good, but were not the simple transmission of command as were the Ten Commandments.

Moses had a mob to handle and he could not expect them to act for their own good because it was the correct thing to do; therefore, in even the simple laws of health he gave them as a direct command from Jehovah, thereby binding the people, not only with an intellectual, but a religious belief. Here, as elsewhere, he shows not only his knowledge of disease, but his knowledge of the patient.

The task was undoubtedly the greatest that any one man ever undertook, for he had not only to bring a people from one land to another, but to make a nation of them while on the way. He knew that a good man, mentally, is far better equipped when a good man physically, and so he determined to bring into the Promised Land a nation that could procreate children ever able to protect the faith of the one God. He divided the people into three classes, and here we see his Egyptian training, for first were the Levites, next came the fighting men and, lastly, the people of the camp.

The Levite, or priest, was the spiritual and physical guide of the people. He was to be a model for all others and had to be physically perfect. Not only this, he could only marry a virtuous and healthy woman who could bear children as healthy as their parents. These men were Moses' lieutenants, and such constituted the medical staff of this great movement; in other words, they were the doctors of the camp whose maintenance was provided by the government.

The hygienic policy of Moses must be regarded as the work of a man, for it is above all a policy of caution and one of taking no chances. Moses was not all-wise and knew it. He was, however, the greatest of autocrats and never considered the individual when he was a possible danger to the whole. Being a big man, he thought big thoughts and for him the *Nation* always stood first. He never suggested a remedy, and was almost heartless to the sick, his one care being the preservation of the healthy and the physical integrity of the race.

The results of his life go to show the success of his efforts, but it comes home with something of a shock that a large part of his success was attained by methods and ideas we are accustomed to believe a part of our nineteenth

century civilization. For instance, he was the originator of the quarantine; a sick man had to report to a Levite, who, if he were not positive of his diagnosis, would put the man in solitary confinement until the nature of the disease was finally determined, when he might be commanded to stay unclean for a variable time, or expelled from the camp. Again, he seems to have grasped the modern idea of the importance of contagion as compared to infection. People might visit the sick and talk with them, carry them food, or perform various services, but he who touched a sick man, the clothes he wore, the bed upon which he slept, or anything he had handled, became immediately unclean and had to report himself to the priest as such. This seems almost a part of our modern surgical technique.

Unclean was a word of terrible import and wide meaning; it might be defined in English as the word *dangerous*. The unclean was not necessarily a sick man, nor one certain to be sick; he was simply a possibility who was danger to his fellows. That this danger might be of a varying intensity is shown by the penalties of the law—one man might be unclean for a week, another for a day, but there is an unvarying formula which goes with it and is in reference to the bath. This was, indeed, the chief remedy of Moses for all conditions. A man who had touched a sick comrade was required to take a bath and be unclean for a time, but the bath was the first thing to be done; after this, he reported himself to the Levite for a proper disposition of his case.

The laws of marriage were designed that healthy children might result. Moses had lived in the Egyptian court where the marriage of brothers and sisters had produced a line of sovereigns famous for every degenerate act, so he laid down the laws of consanguinity, which are practically the laws of our own land on the subject. He allowed no disfiguring of the child and tattooing and other savage rights were debarred by this act.

As to food, one cannot help thinking that Moses' ideas were based on ethical as well as practical reasons. Here, however, he attempts to lay down the general law that animals that have the cloven foot and chew the cud are good for food, all variations of this, however, being unclean. It can readily be believed that the exclusion of swine flesh in a tropical country is a good hygienic measure, but why the hare

should be excluded is hard to understand. Fish without scales and fins, all four-pawed animals, carnivorous birds and creeping things are excluded from the Jewish dietary. It would seem that the main idea governing him here was the exclusion of all animals that act as scavengers and those that feed on bloody meat, for blood, as a drink², was a thing absolutely forbidden.

All excretions are unclean and cannot be thrown broadcast. We have no means of determining whether typhoid and hookworm were present in those days, but the command that the Israelite should bury his feces would prevent these two diseases.

All disease was grist that came to Moses' mill, and most of it went out labeled leprosy. It is true that there were different varieties of leprosy considered and the discerning doctor of to-day can pick out diseases he meets in his every-day work, but leprosy, as such, was most feared and avoided.

The existence of venereal disease is apparent to the student of every age and was one condition that Moses evidently feared. This is shown very graphically by his method of disposing of the town of Beth-Peor.

Beth-Peor was a town in Canaan that was the headquarters of the lowest of religious cults. It had its counterpart in later days in the Groves of Daphne and in the Saturnalia of Rome, for here licentiousness and lust of every description were religious rites and a votive offering to the god. Within the precincts of the temple no woman could refuse of any man, and it must have been as Moses knew it to be, a hot-bed and spreading-point of every venereal contagion. Beth-Peor means Temple of Peor, and the god of this temple was called Baal-Peor.

Now, when the Children of Israel abode in Shittim, in the language of the Bible, "Israel joined himself unto Baal-Peor, and the anger of the Lord was kindled against Israel," which is another way of saying that disease was contracted and spread among the people. "And Moses said unto the Judges of Israel, slay ye every one his man that were joined unto Baal-Peor * * * and those who died in the plague were twenty-and-four-thousand." There is nothing to indicate here what percentage of this great number died of infection or at Moses' command, but a study of syphilis shows that it has at times acted as a death-dealing plague.

"And the Lord spake unto Moses, saying. Vex the Midianites and smite them, for they

vex you with their wives wherewith they have beguiled you in the matter of Peor." "And Moses spake unto the people saying, arm some of yourselves unto the war and let them go against the Midianites * * * and they slew all the males * * * took all the women of Midian captives * * * and Moses was wroth with the officers * * * and said unto them, have ye saved all the women alive? behold, these caused the Children of Israel to commit trespass against the Lord in the matter of Peor, and there was a plague among the congregation of the Lord. Now, therefore, kill every male among the little ones and every woman that hath known man by lying with him."

There were two reasons for this command; in killing the male children, Moses wished to rid himself of this debasing race, but the killing of the women was solely to prevent further infection.

To extinguish a nation is a tremendous affair, but there was no animus in Moses' directions; he simply said, "Thou shalt utterly destroy them, that they teach you not to do after their abominations." They stood in his path and he swept them aside.

Moses was a stern man, but he loved his work and his people, and believed in a most modern sense that all things which are good are of God. He drew his lines fast and looked on punishment as an inevitable sequence that follows a broken law. In his own words, "See, I have set before you this day life and good; death and evil."

17 East Grace Street.

THE PHYSICIAN'S DUTY TO THE PEOPLE.*

By M. L. DALTON, M. D., Floyd, Va.

Fellows of the Southwest Virginia Medical Society, Ladies and Gentlemen:

Again we meet in the Magic City that so heartily bids us welcome. As your presiding officer, as is customary, it becomes my duty to address you again. As I grow older I realize more fully the responsibilities of the true physician, and a few days ago, knowing that I must soon address the physicians of this Society, the most important subordinate society in the State, it occurred to me to talk along the line of the physician's duty to the people.

Some one has said, "An honest man is the

*President's address before the semi-annual meeting of the Southwest Virginia Medical Society, at Roanoke, June 20-21, 1911.

noblest work of God." I believe if this should be written at the present time it would be said the doctor, especially the country doctor, is His noblest work. The physician is truly a servant of the people. He sees him come wriggling and screaming into the world, holds his throbbing pulse and smoothes his fevered brow and sees him depart.

The doctor is in closer touch with his clientele than any other calling or profession. His opinion is eagerly sought on all subjects, and he has the confidence of the whole family. He knows of all their weaknesses, and is familiar with the family skeleton that is kept closely closeted from all other comers, for when there is sickness and death in the family all are off their guard. He sees them as they are. This close touch with his clientele is said to be the cause of much petty jealousy among physicians.

The family physician has been to the birth of all the children of a large family, has treated them through measles, mumps, chicken-pox, etc., and when another physician steps in and secures that family's practice, the old physician feels that he has received a raw deal, and that the affections of those near and dear to him have been alienated, unfairly possibly. The new man more than likely is a young college graduate with his pockets full of ready-made prescriptions, is possibly a distant cousin of the family or a member of the same church.

How shall we prevent being supplanted by the younger man? By keeping to the front ourselves, by keeping a clean, up-to-date office, new books on all subjects, take a post-graduate course at least every five years (which I believe every physician should be required to do), use new and up-to-date remedies that prove to be good, and try to be the first man to introduce anything that is new, if it is better than the older methods, in your community.

Every physician should realize that his clientele deserves and should expect his best efforts to restore them to health. They should have his undivided attention. Do not try to follow too many callings—do not try to be a farmer and a physician at the same time, as your patient resents the idea that your mind is on something else when he is at your mercy. They love to think that you are interested in their case and nothing else; in fact, no physician can be successful unless he gives each patient the undivided attention he deserves. I have known

worthy physicians who lost out by trying to be farmer and physician at the same time; least of all, do not try to follow two professions at the same time. I have known some good, conscientious physicians that were ministers and physicians, but, as a rule, it is a poor doctor, or poor preacher, more often both.

The general practitioner should be well equipped; in fact, he should be equipped to meet any emergency that might arise, especially the country doctor who is located some distance from a city or hospital. He should be equipped and qualified to do a laparotomy if necessary, for often a life will be sacrificed if he waits for a surgeon to come from the city. He should be prepared to do a mastoid operation, typhoid perforation, Cæsarian section. You can and should prepare yourselves to do this kind of work, but, mind you, I do not say to undertake something you cannot do, or to pretend to do something you cannot do, for a pretender is a quack. Do not be a quack. You should be prepared if you are located in the country to remove hypertrophied tonsils in children or to snare them out if large and pedunculated in an adult. If you have a case that has a constant sore throat, from every cold, you can usually cure it with the galvano cautery, all of which you should be prepared to do. You should be prepared to remove adenoid growths, and I believe it is criminal to neglect these little patients, for there is nothing that will cause more dire results if let alone. You should protect the people from quacks and quackery at all times. Save the people from themselves. You can only do this by doing the work that the people demand, and doing it right and in a legitimate, ethical way. Do it better than the quack. Do not allow people to suppose that the traveling quack is a better posted man than you, but expose his ignorance and convince the public how they should be treated by a competent man.

If you are located in a country remote from the city, you should have at least one medical man that can do refraction, and thereby save the country hundreds of dollars each year that go out to the itinerant spectacle peddler and are worse than lost.

Another class of patients that often fall into the hands of quacks is the cancer patient. This the physician should not allow, but they should be given the plain, unvarnished truth. Teach them that the only hope is in early operation—

there is one exception I make to this; in case of epithelioma they will certainly fall in the hand of quacks, so great is their fear of the knife, unless they are treated on medical lines. This you can successfully do by applying a caustic paste; my favorite is arsenic, two parts; powdered acacia, one part; saturated solution cocaine, q. s. This, I believe, for the superficial skin cancer is a better treatment than the knife, and you can more readily get the consent of patients to this treatment than to surgery.

Again, I believe it is the physician's duty to prescribe galenical preparations as much as possible. It is in an easy matter to write prescriptions for proprietary preparations that are most as numerous as the sands on the seashore and whose names are as meaningless as the names of a Pullman car, but are you doing your full duty to your patient? Could you not with a little study and use of gray matter get up a better remedy for the case in hand? Look over the formula of the various ready-made preparations and see if there would not be something you would leave out or something you would add, or does the dose of each ingredient strike you just right. There are some elegant preparations from which we may get good results, but I would advise all physicians to change bottles and dispense under his own label. The manufacturing pharmacist tells us he advertises only to physicians, but tells us to dispense in original bottles with name blown in side, and literature giving all indications. Who could want or wish for a better advertisement to the laity than to be prescribed by the physician! As a rule, you will never have to prescribe but once and all the neighbors will be taking it forever afterwards.

The people expect, and rightly so, that their physician should be a moral man; especially is this so in small communities. He is looked upon as a criterion that others may follow. His character should embody promptness, firmness, discretion, honesty, loyalty, and sympathy, true to his patients, and honest with his fellow man. A great deal more might be said, but whole volumes might be written on this one subject, yet the half would never be told.

While we acknowledge that we owe a duty to the people, on the other hand there is a duty the people owe to the physician.

The greatest obstacle the physician has to contend with is ignorance, for how much more

pleasant is it to deal with intelligent people—people that know the physician's duty and know his limitations, that know how to encourage him, that know how to bear with him, that do not expect the impossible, but realize that he has a powerful foe to fight that must sooner or later win, and are willing to assist him by nursing and in every way possible to help him to aid nature to come to the rescue of the sick one.

There is another class that think their duty to the physician and patient is ended if they call him in, have him prescribe, and pay his bill, without any special effort to see that his remedies are administered or that his directions are carried out.

Another class merely send for us because we have the medicine, not because we possess superior knowledge to the knowing old woman "in the neighborhood," who can draw out fire or cure the "thrash" by blowing her breath on it, can make a child "cut teeth by rubbing its gums with warm rabbit brains," or can cure "shingles" with the "blood of a black cat's tail," which disease, if allowed to extend all the way around the body, will surely prove fatal.

It seems that the laity consider it our duty to respond to every call, regardless of all conditions, rain or shine, hot or cold, pay or no pay. It matters not how many sleepless nights we have previously had, we must respond because we are a servant of the people. I was once treating a poor fellow who said, "Doctor, a physician has a hard time if he does his duty." I said, "Yes," he being too sick for further discussion. In riding home I could not help wondering what John's idea was of a physician's duty, but I have never had an opportunity of rehearsing it with him, as John now sleeps with his fathers.

I could talk on this never-finished subject, but I must desist. Gentlemen, I take this opportunity of again thanking you for the confidence imposed in me and the honor conferred upon me by electing me your presiding officer for the term just passed. I sincerely hope that each year will find us one round higher on the ladder of fame and progress, and I wish each and every one of you all possible success both in your profession and private life.

"Pure air makes pure blood, pure blood makes one disease resisting."—*Report Norfolk Va., Dept. of Health.*

Proceedings of Societies, Etc.

NORFOLK COUNTY MEDICAL SOCIETY— SURGICAL SECTION.

Reported by FRANK H. HANCOCK, M. D.

The subject for discussion for the November, 1911, meeting, held at Norfolk, Va., was:

The Mayo Clinic, Influences and Teachings.

Dr. E. E. Feild opened this meeting with a review of the work done on the thyroid. He detailed an interesting conversation with C. H. Mayo on the climatology of goitre, in which Dr. Mayo recalled the belief in Europe, apparently originating with the Kochers, that in certain localities, mountainous districts, the disease was endemic, said to be due to water from the mountains. Dr. Mayo does not accept these views, recalling that goitre may be found in flat countries, as in the Punjab country of India, in the plains of Lombardy; it does not appear to him that any goitre areas exist in the United States as described by Crile, the so-called Great Lake, and Columbia River Valley regions. The various kinds of goitre that have appeared at the Mayo Clinic bear no relation to geographical boundaries.

The operations were interesting, partly from the fact that the site was kept so markedly clean and dry, and might be seen to advantage at all times; from the fact that each step was clearly explained as the operation advanced, each structure, and its relations shown, and thus having seen and heard, the memory would retain—factors of educational value that have called this Clinic into international prominence.

The necessity for preservation of the posterior capsule was described, to avoid many dangers of thyroidectomy, how that capsule winds around both trachea and œsophagus, how hidden in its folds are the para-thyroids, removal of which will produce tetany, how the recurrent laryngeal crosses between the trachea and œsophagus, and thus is so often affected by the pressure of tumors, by operation, or by scar tissue.

An interesting thing was mentioned here, and that was that loss of voice occurs more frequently in malignant than in other tumors, because the former soften the anterior tracheal rings, while the latter grow and press upon the sides.

Dangers in the operation of goitre that must be constantly guarded against give it a high

rank in major surgery said Dr. Mayo. One of these dangers is myocardial change, shown by uneven tension and irregularity of pulse; others to be avoided are gastric crises, ascites and diarrhœa. The particular reason why this class of complications exists in grave hyperthyroidism is due to excessive absorption of thyroidal secretion, where the normal function is to dilate the capillaries, opposing after this manner, the constricting effect upon blood vessels of the secretion of the suprarenals; thus we get continuous dilation and œdema in these hyperthyroidal states when equilibrium is lost between the two secretions.

The importance in looking for these conditions before operating is shown in the lessening of the mortality rate. In the first 16 cases operated upon at the Mayo Clinic there were four deaths, three deaths in the next thirty operations, and only two in the next 150.

Since the continual absorption of thyroidal secretion is responsible for these morbidities, in the presence of which we may not operate, something must be done to check the formation of the secretion, and Dr. Mayo accomplishes this purpose by ligating both superior thyroids, as advocated by Kocher, and then, later, when the œdema has disappeared and the patient shows the improvement that usually follows these ligations, doing the thyroidectomy, removing the hypertrophied parenchyma—the secreting area.

Dr. Mayo emphasizes the need of substituting the term hyper-thyroidism for the nebulous "Graves' disease," "Basedow's disease," "exophthalmic goitre"; how the terms hyper- and hypo-thyroidism express definitely all that the thyroid can do, or can not do, aside from some mechanical pressure effects, and he hopes that this and all other unscientific nomenclature will go where exhalations and miasmata and all other such age-long talk have gone.

Dr. Feild was impressed with the classification of goitre tumors and affections as given at this Clinic, because of their extreme simplicity: (1) Cystic goitre, when the acini are swollen and their walls stripped of parenchyma, or lined with very flattened epithelium, and whose contents, colloidal in nature, are apparently non-absorbable; and (2) hypertrophied parenchyma, giving an increased secreting area with an increased absorption of iodo-thyro-globulin, giving rise to the clinical condition known as hyperthyroidism; (3) cystic goitre, clinically and his-

tologically, which at some period develops symptoms of hyperthyroidism due to the fact that papillary projections have developed into the lumen of the alveoli which are distended with colloidal material, as in other cysts, giving an increased surface, with absorption and symptoms of hyperthyroidism; papillary cystic goitre; and, lastly, the two foetal types, distinguished by connective tissue over-growth in the one, and adenomatous hypertrophy in the other.

Oesophageal Diverticuli.

Dr. J. Warren White saw an interesting case of oesophageal diverticulum at the Mayo Clinic in July last.

Discussing this peculiar trouble, he said there seemed to be some confusion in the literature, of this subject, C. H. Mayo claiming that Rokitsansky, in 1840, made two classifications of diverticula: (1) From internal pressure, called "Pulsion" or "Pressure" sacs, and (2) "Traction" sacs, originating from scar tissue, or contraction of inflammatory processes adjacent to the canal.

Now De Witt Stetton makes identically the same claim for Zenker, saying, "As is well known, it was Zenker who, in 1877, divided oesophageal pouches into two classes," and he proceeds to give the classification exactly as it is given above. Anyway, they agree upon the classification, which is something, and we know there are really two types, into one or the other of which all cases fall; and, as that is our principal concern, we pass to their description, remembering the civil wars that have raged around questions of this sort in the history of the profession.

Two distinguished monographs upon this subject—one by De Witt Stetton, and another by C. H. Mayo—agree that the most frequent and characteristic location is at the junction of the pharynx and the oesophagus, posteriorly, for the reason that there is a normal anatomical deficiency of the longitudinal muscular fibres, and that there is a rigidity here, or sphincter-like apparatus at the entrance to the oesophagus. They are rarely seen before forty years of age, showing that they are certainly acquired states, with, however, a predisposing morphology, as has been shown.

Difficulty in swallowing is practically the first symptom, the bolus entering the sac distending and compressing the gullet; then a cough from

nerve irritation, and a coincident dyspnoea from pressure behind the trachea. The course of the disease is chronic, and leads to starvation, aspiration pneumonia, or pulmonary gangrene. The sac may perforate, with resulting mediastinitis.

Delayed diagnosis has been the experience of the profession with this uncommonly morbid condition. Especially has there been a characteristic variability in the result of sounding, the instrument sometimes entering and sometimes passing the opening of the sac, for which reason Dr. White emphasized the importance of the method used by the Mayo's, which is as follows: The patient is instructed to swallow three yards of button-hole silk twist, and the next morning to swallow three yards more of continuous thread; if there is an opening through the stricture, or out of the diverticulum, this thread will be washed into the stomach, and from there into the bowel a sufficient distance to stand traction without being drawn. A whale-bone stem with olive tip—various sizes may be used—is now threaded to the silk and passed down the oesophagus until obstruction is encountered; traction is then made upon the thread, and if the probe is elevated by this manœuvre it will be raised to the level of the opening in the oesophagus, proving at once the existence of a pocket, and its depth by the amount of the elevation; whereas, if the obstruction encountered by the probe in its descent through the oesophagus is a stricture, then traction upon the silk thread will not alter the position of the probe and the differentiation between the two is made.

This thread method does away with the necessity of a previous gastrostomy for feeding purposes, as performed and advised by many operators, because a stomach tube may be passed upon the thread, and the patient fed as often as necessary. Dr. Mayo treated a case this way that had been reduced in weight from 135 to 90 pounds from starvation, and at the end of three weeks feeding removed a sac containing 16 ounces of fluid.

Radiographs were shown at the Clinic of oesophageal diverticuli, obtained by the acacia-bismuth mixture, where the size, shape and location of the sacs were plainly to be seen.

Dr. R. L. Payne, Jr., discussed the educational value of a trip to the Mayo Clinic, and expressed himself as especially interested in the Surgeons' Club. This club meets every after-

vided for the purpose by the Mayos, and there they discuss in detail the operations performed each morning, and what was said about them by the operators. Surgeons from all sections of this country and from Europe may be seen there constantly, from thirty to fifty or sixty in number, and it was Dr. Payne's belief that the daily association with men of such calibre as gather there, the privilege of taking part in, and listening to the interchange of their views, is the richest of surgical experiences.

An Appreciation of Wm. J. Mayo.

His intellect is as keen and as infinite as was Galen's, who in many respects was the greatest doctor the world has ever seen.

His gifts are as varied in his art as were Meredith's, and Balzac's, in literature.

By the sheer force of his knowledge he has become the innovator and reformer of this age, just as the early Greek masters were of theirs, when they whipped medicine into an art, and when at a later period, in the intellectual capture of Rome by the Greeks, they were responsible for the prominent part played in that capture by the doctors.

His surgical invasion of the upper abdominal region was not a whit less heroic, doing away with crudities, pruning superfluous technic, recognizing instinctively the value of early operations, making operations there not only possible but satisfactory, and bringing them within the reach of the humblest operator, wherever engaged in the alleviation of human ills.

We are reminded of that fine reality of Galen's mind in listening to the lectures or reading the works of Wm. J. Mayo, remembering the tremendous impetus he has given to the surgical world, and the impress of his genius that modern surgery bears; we instinctively feel that a large part of the quota of imperishable facts that are to characterize this century are being furnished right there under the hand of this startling and stupendous man.

Galen's fundamental principle that disease is contrary to health and must be overcome by what is contrary to disease, seems to have been an anticipation of the germ theory that was to come seventeen centuries later, and his statement that "Nature is to be preserved by that which relates to Nature" was a prescient dream of serum therapy which was to arrest the invading organisms and parasites in human beings,

that, unchecked, had annihilated many another animal species.

Like the great Greek, whose influence survived him 1,500 years and was so potent at the end of that period that a professor in the London College of Physicians was required to sign a renunciation of all impugning of the infallibility of Galen, like him Wm. J. Mayo will take his place to live in the literature of the ages.

Analyses, Selections, Etc.

Medical Slang.

In an article by one of America's most prominent surgeons and medical authors, very recently published in a State journal, says the editor of the *American Journal of Surgery*, we find the passages: "After removal of an acute appendix" and "the unmasking of a chronic appendix in ambush." Of course, the author means by "an acute appendix" "an acutely or chronically inflamed appendix" or "an acute appendicitis." But why carry the inelegant slang of the operating room into the manuscript of a presumably dignified address, into the printed page of permanent medical literature!

"An acute appendix" is of a piece with "the patient had no temperature" and with the numerous other instances of slang that are found in the manuscripts of those who ought to know better. They constitute one of the several unnecessary burdens cast upon the careful editor by writers who would feel aggrieved if they were accused of carelessness.—(*American Medicine*, October, 1911.)

Notes on the Technic of Suturing Blood-Vessels With a New Instrument.

Dr. J. Shelton Horsley, Richmond, has described a new technic for suturing blood-vessels by means of an instrument that holds the guy sutures in position and keeps the margins of the arterial wound everted. A continuous mattress suture of fine silk is used with a number sixteen straight needle. The instrument consists of a shaft, or handle, six inches long, which curves at one extremity into a shorter shaft one and three-quarter inches long. The curved portion is flattened out so as to form a light spring. The short shaft occupies an angle of fifty-five degrees to the long shaft. noon at 3 o'clock in a commodious room pro-

Buttons are placed in such a position that when three guy sutures in the blood-vessel are wrapped around them the circumference of the vessels is pulled into the shape of a triangle. One of the chief difficulties in suturing blood vessels is managing the guy sutures, which is obviated by this method. The continuous mattress suture does not tend to cut the vessel wall, and leaves but little thread exposed in the lumen while making accurate approximation. No skilled assistant is required. After the guy sutures have been fixed on the instrument the tension along the arterial margins remains the same throughout the operation. A point of leakage can be easily demonstrated by pressing the short shaft toward the long shaft, which relaxes the guy sutures. If there is a spurting point, the Crile clamps are reapplied and the point sutured while the blood-vessel is still held by the instrument.

This method can be used either for suturing arteries or for transfusion of blood. In transfusion of blood a point in the vein should be selected near a branch and the branch clamped with mosquito forceps. Often the radial artery contracts so greatly as almost to shut off the flow of blood. When this occurs, a probe anointed with vaseline can be run through the venous branch, through the site of anastomosis and up into the radial artery, thoroughly dilating it. This will be impossible with a metal cannula without seriously injuring the intima. The venous branch also acts as a gauge to indicate the rate of flow.—(*Author's abstract.*)

The Marriage of Whites and Blacks.

Every student of sociological matters, says the *American Journal of Dermatology*, will be deeply interested in the press reports of the alliance between a negro girl and a white man, the dénouement of which occurred quite recently. In a quiet suburb of St. Louis lived a family, among whose children were several good looking girls. It is true they were dark skinned, but as they declared their family to be of Spanish extraction, no suspicion whatever that they were of Ethiopian descent was aroused until a child of a distinctly negro type was born to one of them, the wife of a white man. The husband had courted the girl for many months and saw no indication that she was the offspring of mixed parentage. He married her. Finally the baby came. There could be no doubt, from the appearance of this child that it was of negro

ancestry. With the arrival of the child the truth became known. The young wife was a negress. The features of interest in this case are the wide chasm between the races and that reversion to type is one of the immutable laws of Nature. The races are farther apart than ever. The black race will never be absorbed by the white race. The former race may become attenuated and gradually die out as a result of disease, and the sterility of its hybrid stock, but there can be no encouragement offered to those deluded fools who pretend to see in miscegenation the solution of the race problem. In this particular instance, whilst the mother is so nearly white that for many years she passed as such, and the father is a pure Caucasian, yet it is said that their child is just an ordinary little pickaninny. In formulating her law of reversion to type, Nature knew well what she was about. The feeling of horror which comes to every white person reading of this sad mesalliance is an unconscious manifestation of race superiority, which is deeply implanted in the white bosom. Nature has ordained that the two races shall not meet on terms of equal footing and white advocates of social equality between whites and blacks would better modify their code. It is not prejudice that keeps the negro below us—it is simply one of Nature's laws and it will exist in force throughout all time.—(*So. Med. and Surgery.*)

A Simple Method of Purifying Almost Any Infected Water for Drinking Purposes.

Nasmith and Graham in their very complete paper described this method as follows (*Jour. Royal Army Med. Corps*, July, 1911):

1. Take a teaspoonful of chloride of lime, containing about one-third available chlorine, and remove the excess of powder by rolling a pencil or other round object along the top of the spoon, or by flattening it with a penknife blade, so that the excess will be squeezed off.

2. Dissolve the teaspoonful of chloride of lime in a cupful of water, making sure that all lumps are thoroughly broken up, and to it, in any convenient receptacle, add three more cupfuls of water.

3. Stir up the mixture, allow to stand for a few seconds in order to let any particles settle (this stock solution if kept in a tightly stoppered bottle may be used for four or five days), and add one teaspoonful of this milky stock solution to two gallons of the water to be puri-

fied in a pail or other receptacle. Stir thoroughly in order that the weak chlorine solution will come into contact with all of the bacteria, and allow to stand for ten minutes. This will give approximately one-half part of free chlorine to a million parts of water, and will effectually destroy all typhoid and colon bacilli or other dysentery-producing bacilli in the water. The water will be without taste or odor, and the trace of free chlorine added rapidly disappears.

This method is also applicable to the sterilization of wells which have been infected, provided, of course, that the source of the infection has been removed. It would obviously be futile to sterilize a well situated in a farmyard from which organic matter and bacteria are constantly draining into the well.

If one knows the diameter and depth of the water in the well in feet, the amount of chloride of lime may be easily estimated. For instance, the writer wished to destroy the bacteria in the well at his summer cottage, the well being 6 feet wide by 4 feet deep. The formula would be radius squared $\times 22.7 \times$ depth of the water $= 3 \times 3 \times 22.7 \times 4 = 113$ cubic feet of water in the well. One cubic foot contains $6\frac{1}{4}$ gallons of water, so that there were $113 \times 6\frac{1}{4} =$ about 700 gallons of water in the well.

One and a half pounds of chloride of lime to 100,000 gallons will give roughly one-half part of available chlorine in a million parts of water, or 1 pound to 66,000 gallons. Therefore, $700 \div 66,000 \times 16 = 1.6$ ounce chloride of lime was necessary to purify the well. The chloride of lime was mixed with water, diluted, and poured into the well, and then thoroughly mixed by plunging a long pole with a couple of strips of wood nailed across one end up and down in the water. The water before chlorination contained 950 bacteria per cubic centimeter with colon bacilli present; after chlorination there were only nine bacteria and no colon bacilli.—(*Am. Medicine*, October, 1911.)

Explosion of the Uric-Acid Theory.

Observant and analytical physicians have long ago become sceptical as to the reality of any uric acid diathesis, which has for so many years served as a scape-goat for the dietary indiscretions of so many patients. Dr. E. Faber, a Danish physician, reviews and knocks down the whole theory. He says that the whole apparently harmonious structure, when considered

closer, is seen to be based on premises which are either highly improbable or unproved. The physiologic bases are hollow or have long since crumbled away; the most important connections are missing and the steeple on the building—the treatment—rests for the most part on empty air. Faber reviews the pathogenesis, the clinical experiences and symptomatology of the various affections which are grouped as manifestations of the uric-acid diathesis, and shows how they all have one common causal factor which bridges the gaps between them, and which does not need the assumption of any diathesis to explain the true inwardness of the various affections. This one common factor is immoderation in eating. The conditions leading to over-eating and drinking being usually the same for the members of a family, it is no wonder that the assumed "uric-acid diathesis" affects all the members of the family, thus explaining its familial and inheritable character. The injury from overeating is felt most severely in different individuals. This explains the "mysterious" alternations of affections in the different members of the family, as, for instance, Charcot's classical example of a family in which the father has diabetes with obesity; and of his five sons, three had gout, one diabetes, obesity and a joint disease, one obesity, and a daughter and a granddaughter gout and obesity. The anomaly in the nuclein metabolism which is found in true uric-acid arthritis—the low endogenous elimination of uric acid with the periodic increase and the increased elimination of the exogenous uric acid—is not encountered in the other affections which are included in the alleged uric-acid diathesis. This conception often stands in the way of rational management of the case. With kidney calculi, for instance, alkalines are indicated, while they are useless or do harm in uric-acid arthritis. In the arthritis, a purin-free diet is often indicated; but this is an absolute blunder in the chronic anemia and debility of chronic polyarthritis or for asthenic patients with myalgia and neuralgia. The assumption of the uric-acid diathesis often blinds the eyes of the physician to the necessity of seeking a psychic cause for disturbances, which may be the only key to proper treatment. On the other hand, it is easier to incriminate the uric acid than to convince a patient that he is eating too much, but a radical cure or material improvement is possible only after a suitable anti-obesity or weaning

course of dieting.—(*Med. Review of Reviews*, November, 1911.)

Authority Vs. Fact.

We frequently speak, in medical parlance, of the opinion of the "latest authorities," "the highest authorities," and so on, and quote their opinions with a respect approaching reverence. We seem to feel that what they believe must be true, and whatever they condemn is beyond the pale. It is a comfortable doctrine to one who has access to the books and journals wherein said authorities promulgate their views, absolving one from all responsibility so long as one follows the authorities. This would be very nice if mortals were infallible. It would be tolerable even as we are but for a certain vice called "pride of opinion," which leads a man to value consistency more than actuality, to adhere to an error because he once proclaimed it, to maintain that "the horse was fifteen feet high."

A notable instance of the variation between truth and authority is seen in the treatment awarded to *veratrum viride* by most of the text-books on materia medica and therapeutics. This Journal publishes on another page a letter from a reputable physician wherein he expresses his surprise at the wide difference between the teachings of the text-books and colleges concerning that drug, and the practical use made of it by physicians in active and successful practice, and the views he expresses are held by thousands of doctors in every part of this country. Except in fashionable practice in large cities, *eclampsia* spells *veratrum* to the experienced doctor, and spells it promptly and without hesitation. Few months pass without the published testimony of some prominent physician to its almost specific effect in eclampsia, some of them gaining their experience in large maternity hospitals. *All who have used* it testify to its safety and certainty in that disease; and many also use it whenever excessive arterial tension needs correction. Yet the text-books generally dismiss *veratrum* with a brief reference to the latter property, and state that its therapeutic effects are identical with those of aconite. It is even suggested that because of this likeness it may well be dropped from the pharmacopeia.

The reverence of the average doctor for the spoke word of "authority" is almost painful.

The writer was present at a meeting of the Section on Materia Medica of the A. M. A.

when a well-known author read a fine paper devoted to aconite and veratrum. He elegantly and forcefully dilated through page after page on the demonstrated properties of aconite, but when he finished that and came to the consideration of *veratrum*, he dismissed it with a few words, on the ground that it was so *identical in effects* with aconite that what was said of the latter might be held to apply to the former.

Then he sat down. Two or three members briefly complimented the paper in the usual way, but not one dissenting voice was heard. Finally, as another title was about to be called, one of those fellows who is always rushing in where angels fear to tread, rose, and fearfully begged permission to ask a few questions. The request was graciously granted. He said (in effect): "Does aconite ever cause death?" "Yes, of course. Improperly used, it is a violent poison." "Did you ever know a case of death from *veratrum*?" "Well, I do not remember one just now." "Did you ever hear of such a death?" "Not that I now remember, but it is seldom used. Probably there are members present who have seen such a death." "Will any gentlemen present who ever knew or heard of such a case please say so?" No one spoke. Then the "butter-in" gave his long experience and observation with *veratrum* in eclampsia and sat down, after which several rose to corroborate him. The point is, we are afraid to oppose an "authority," lest we get "sat down on." Not a "sensible" man there dared lead the attack. And so it is in many things besides *veratrum*, in which particular case each successive edition of the original error has to reassert "the horse is fifteen feet high," and each new author bows to his predecessors.

To the true doctor there is but one "authority," and that is *the truth as demonstrated by clinical experience*, and when "original workers" run against that rock, all the test tubes and balances on earth will be shattered. It is only when they support and explain clinical finding that they can bolster authority.—(Editorial, *Southern Medical Journal*, November, 1911.)

Correspondence.

American Red Cross.

Major Charles Lynch, Medical Corps, U. S. A., Chairman Exhibition Committee, requests that we publish the following:

The American Red Cross desires again to invite attention to the exhibition in connection with the Ninth International Red Cross Conference, which will be held in Washington, D. C., from May 7 to 17, 1912.

The exhibition will be divided into two sections, which will be styled Marie Feodorovna and General. The former is a prize competition, with prizes aggregating 18,000 rubles, or approximately \$9,000, divided into nine prizes, one of 6,000 rubles, approximately \$3,000; two of 3,000 rubles each and six of 1,000 rubles each.

The subjects of this competition are as follows:

1. A scheme for the removal of wounded from the battle-field with the minimum number of stretcher bearers.

2. Portable (surgeons') washstands, for use in the field.

3. The best method of packing dressings for use at first aid and dressing stations.

4. Wheeled stretchers.

5. Transport of stretchers on mule back.

6. Easily folding portable stretchers.

7. Transport of the wounded between war-ships and hospital ships and the coast.

8. The best method of heating railway cars by a system independent of steam from the locomotive.

9. The best model of portable Roentgen apparatus, permitting utilization of X-rays on the battle-field and at first aid stations.

The maximum prize will be awarded to the best exhibit, irrespective of the subject, and so on.

The General Exhibit is again divided into two parts. The first will be an exhibition by the various Red Cross Associations of the world. The second will be devoted to exhibits by individuals or business houses of any article having to do with the amelioration of the sufferings of sick and wounded in war, which are not covered by the Marie Feodorovna Prize Competition for the year. While the American Red Cross will be glad to have any articles pertaining to medical and surgical practice in the field, it is especially anxious to secure a full exhibit relating to preventive measures in campaign. Such articles will be classified as follows:

1. Apparatus for furnishing good water in the field.

2. Field apparatus for the disposal of wastes.

3. Shelter such as portable huts, tents and the like for hospital purposes.

4. Transport apparatus (to prevent the suffering of sick and wounded) exclusive of such apparatus as specified for the Marie Feodorovna Prize Competition.

As with the Marie Feodorovna Prize Competition, for this country, only articles having the approval of the Central Committee of the American Red Cross will be accepted.

Diplomas will be awarded for exhibits in this section of the exhibition as approved and recommended by the jury.

Further information may be obtained from the Chairman Exhibition Committee, American Red Cross, Washington, D. C.

It is perhaps to apparatus having to do with prevention of disease in armies that the energies of Americans have been specially directed since the Spanish-American War. Therefore the last mentioned section of the Exhibition should make an appeal to them.

Book Notices.

Songs of Love and War.—(Second Edition.) By H. M. CLARKSON, A. B., M. D., Journal Publishing Co., Manassas, Va. \$1.

Doctor Clarkson had earned distinction as a poet before the appearance of his work in the form of a volume. His verse was not inspired by ambition for fortune or fame. In the opening "song," dedicated to his publisher, the author points out the source of true poetic impulse; the poet sings, "because singing itself is so sweet." The publisher's work is well done.

"Songs of Love and War" make a notable contribution to the poetic achievement of the South.

Dorland's American Illustrated Medical Dictionary.

A new and complete dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Medicine, Nursing, Biology, and kindred branches; with new and elaborate tables. Sixth Revised Edition. Edited by W. A. NEWMAN DORLAND, M. D. Large 8vo. 986 pages, with 323 illustrations, 119 in colors. Philadelphia and London: W. B. Saunders Company, 1911. Flexible Leather, \$4.50 net; thumb indexed, \$5 net.

In going over the new sixth edition of this dictionary, we are impressed with its practicality and usefulness. All title words are printed

in bold black type with an initial lower case letter, reserving capitals for proper names only, thus furnishing a guide to capitalization. The pronunciation of every word is shown, and the derivation—a great help at times to the meaning—is given considerable attention. Phrases are defined under the nouns, this fact facilitating consultation. The biographic information, *i. e.*, full names, nationality, specialty, date of birth and death, furnished in connection with eponymic terms and the “fathers” of medicine, is of material aid in reference. Seven thousand new words have been added to this latest edition, bringing it fully up-to-date, so that, with the added special features, Dorland’s Dictionary leaves little room for criticism.

Editorial.

Vital Statistics in Virginia.

In medicine, as out of medicine, if we would use the present wisely and properly, we must know the facts of the past in regard to the particular thing on which we expend thought, energy and effort. To proceed otherwise is to proceed in more or less uncertainty. To be sure we can travel in the dark, but we can travel better and faster and more safely by the light of a lantern. What the lantern is to the wayfarer is vital statistics to the physician—it lights and makes certain the way. In dealing with disease and disease conditions there cannot be too much light.

It has been said, and said truthfully, that modern history depends very largely for its report of the past upon documents, official and private, contemporaneous with the events it is considering. In consequence, the value of archives and public records is better appreciated now than ever before. This is an indisputable fact. In our onward march in every line of endeavor the lessons of the past are the only reliable guideposts of the present and future. Recorded facts render mistakes less frequent and further the speed of progress. While this is true, and has been known to be true for many years, does it not seem strange that States treat with unnatural apathy the loss of data which goes to make the very foundation of public health? Health is the basis of strength, physical, mental, financial and spiritual, of any and every community. Health represents strength;

strength ensures production; and a producing people, under equitable rule, is a prosperous, progressive, law-abiding and independent people.

The States have boards of health, and yet they omit by statute to enforce the fixation of data upon which information alone they can search for and cope with the causes of disease and deaths. Vital statistics make the only approximate scientific guide physicians and health officers have, and yet few States, even in this so-called enlightened age, think enough of the health and happiness of their people to cause them to enact such laws as will make statistics available and dependable.

Births, deaths, the causes of deaths, and contagious and infectious diseases should be reported and recorded, not only in every county and large town, but at our State capitol. And these records should be safely protected from injury by damp and dust and destruction by fire. This is of vital importance, because upon their existence depends, in great measure, the future well-being of our people. It is to be hoped that our present Legislature will give this pressing matter substantial consideration. It will not only help to save life, it will help equally well to cut down the ever-increasing expenses of the State. It is but another economic measure.

But while health is of first importance, it is not the only benefit that will accrue to society from vital statistics. Put into effect, vital statistics will establish many uncertain law claims, certain insurance and fidelity questions, and other business matters which cannot be decided in any other way. Now, and more so as the years go on, under modern restlessness and the exactions of modern business methods, families are scattered here, there and everywhere. Hence, it so happens, and will happen more frequently hereafter, that when the heads of these families are “called to rest,” through time and distance, all the facts of previous condition and of consanguinity grow less and less distinct, and finally drift altogether out of mind. Those who knew them may have gone to unknown parts or have died and with no public record of the mother’s or father’s birth, or of their children’s births, and no living witness to these facts, complications arise which cause uncalled for delays, court procedures and expenses. The lawful heir or heirs may be living, but how can

claims so ill-defined be verified? The estate, therefore, has no legal claimant, or rather no legal heir who can establish his claim. This is an inexcusable hardship and the cause of expense which cannot be justified. Is it not time for Virginia to get out of the wearing rut? Vital statistics here also gives light. Vital statistics will carry maximum good at minimum cost. But why the necessity to enumerate reasons for vital statistics? The two words "vital statistics" convey to the man of judgment just what they mean and do. We are, therefore, willing to "rest our case," as the lawyers put it, believing that we will get what we so urgently need.

There should be a committee, known as the Legislative Committee on Vital Statistics, empowered to plead this matter before the present session of our State Legislature. Surely it can do no harm and may do much good.

The Surgeon General of the U. S. Navy,

In his annual report to the Secretary of the Navy, announces that venereal diseases continue to be the most potent factor of damage to the Navy. A system of prophylactic treatment is being carried out, which he believes will be more generally used if his recommendation be adopted, of forfeiture of pay during disability from disease of venereal origin.

The results obtained from typhoid vaccination have justified the recommendation to make it compulsory with all officers and enlisted men under 45 years of age. A similar order was issued several months ago by the War Department, and we understand that Secretary of the Navy, Meyer, has already made typhoid prophylaxis a general order.

It may be interesting to note that at the Naval Hospital, at Las Animas, Col., the results obtained from the treatment of tuberculosis with injections of mercury have not been such as to justify the belief that the mercurial treatment is a specific in the treatment of tuberculosis.

In view of the efficient service rendered by the hospital ship, "Solace," during the past year, it is recommended that a hospital ship should accompany each fleet. In the Atlantic Fleet and its auxiliaries the personnel probably exceeds 14,000, and no city of that size would be without at least one hospital in addition to numerous physicians' offices for consultation and treatment of diseases of lesser importance.

The report is most interesting, and, with the recommendations offered, indicates an intelligent study and inspection of the work done by the Medical Corps of the Navy, as well as what remains to be accomplished.

Dr. Doty Endorsed by the Medical Profession.

Upon recommendation of the commission appointed to look into the management of the quarantine station of the port of New York, the Governor of that State demanded the immediate resignation of Dr. Alvah H. Doty, health officer in charge. Dr. Doty's work for the past sixteen years has been so successful that, though he did not receive the full endorsement of the inspectors, it is gratifying to know he has the confidence of the profession of New York City and Northern New Jersey, who are cognizant of the good he has accomplished. These doctors have held meetings at which resolutions were passed petitioning the Governor to reappoint Dr. Doty to the position which he has so acceptably and efficiently filled for a long number of years.

The Tri-State Medical Association of the Carolinas and Virginia.

Dr. Joseph T. Buxton, Chairman of the Section on Surgery for the State of Virginia, has issued notice of the next meeting of the above Association, which will be held at Columbia, S. C., February 21 and 22, 1912, under the presidency of Dr. J. Howell Way, of Waynesville, N. C. Dr. Rolfe E. Hughes, Laurens, S. C., is secretary-treasurer. Though the program has not yet been announced, it is safe to predict that the Columbia meeting will not be surpassed by former meetings in scientific interest and social pleasures.

The Piedmont (Va.) Medical Society

Will hold its next regular meeting at the University of Virginia Hospital, January 20, 1912. Drs. Geo. W. Starke, Overton, and Frank G. Scott, Orange, are president and secretary, respectively. The local committee of arrangements includes Drs. Hugh T. Nelson, Jr., John Staige Davis and Harry T. Marshall, all of the University. An interesting program has been prepared.

The Bedford County (Va.) Medical Society

Had a good attendance at its last meeting in Bedford City, November 27th, and the program included a number of excellent papers. Of-

ficers elected for the ensuing year are president, Dr. J. A. Davis, Bedford City; vice-president, Dr. W. R. Arnold, Bedford City, R. D., and secretary-treasurer, Dr. W. O. McCabe (re-elected), Thaxton. Upon adjournment of the business meeting a banquet was held at the Palace Hotel.

Medical Corps, Virginia Volunteers.

Lieutenant Colonel Junius F. Lynch, Surgeon General of the State, announces the following items of interest in connection with the Medical Corps, Virginia Volunteers:

Major Truman A. Parker has been placed upon the retired list after ten years' service.

Private William E. Dodd, Hospital Corps, has been commissioned first lieutenant in the Medical Corps and assigned for duty with the Second Regiment Infantry.

Major Israel Brown and Captain Frank H. Hancock were ordered to Milwaukee, Wis., as delegates to the meeting of the Association of Military Surgeons of the United States.

The following medical officers have been detailed to inspect the sanitary personnel at the stations named:

Capt. Giles B. Cook, Richmond, Va., January 9, 1912.
Capt. A. G. Brown, Jr., Richmond, Va., January 10, 1912.

Capt. E. C. S. Taliaferro, Chase City, Va., January 12, 1912.

Capt. J. F. Bright, Roanoke, Va., January 23, 1912.

Capt. H. R. Drewry, Portsmouth, Va., January 30, 1912.

Capt. J. D. Collins, Norfolk, Va., January 31 and February 1, 1912.

Surgeon General, U. S. Public Health and Marine Hospital Service.

Surgeon Rupert Blue, of South Carolina, who made such a fine impression on all health officers who met him at the Jamestown Exposition in 1907, has just been nominated to the Senate by President Taft for the position as Surgeon General of the U. S. Public Health and Marine Hospital Service to succeed Surgeon General Wyman, who died last November.

The Southern Surgical and Gynecological Association,

Which met in Washington, D. C., in December selected Old Point Comfort, Va., for its 1912 meeting, and elected the following officers: President, Dr. J. M. T. Finney, Baltimore; vice-presidents, Drs. Jas. E. Thompson, Galveston, Texas, and W. P. Carr, Washington; secretary, Dr. Wm. D. Haggard (re-elected), Nashville, Tenn., and treasurer, Dr. Wm. S. Goldsmith, Atlanta, Ga.

Medical Fraternities Meet in Richmond.

The Pi Mu Fraternity, which met December 22nd and 23rd, elected the following officers for its next annual meeting to be held November 29 and 30, 1912: Senior Councilor, Dr. Paul W. Howle, Richmond; Junior Councilor, Dr. S. C. Bowen, New York; Secretary, Dr. N. T. Ennett, Richmond, and Treasurer, Dr. Lawrence T. Price, Richmond. This fraternity has an especially large membership in this city, and the annual sessions are always held here. It was decided to install a new chapter at the College of Physicians and Surgeons, New York, in January.

The Chi Zeta Chi Fraternity held its sixth annual meeting December 28-30. In the future, the Northern, Southern and Western conventions will be held in the even years, and the National convention in the odd years, thus making the next meeting of the latter fall in 1913. Augusta, Ga., was selected for this meeting. New York, Knoxville and Memphis were chosen as the 1912 places of meeting of the Northern, Southern and Western Provinces, respectively. Dr. Hugh M. Lokey, Atlanta, was elected supreme eminent grand; Dr. J. C. McDougall, Atlanta, supreme bursar; Dr. Dabney Minor, Nashville, supreme historian, and Drs. Edward W. Ryan, New York; Henry E. Bunch, Augusta, and Verne R. Stover, Little Rock, regents of the above named provinces, respectively.

The Y. M. C. A. of Virginia to Assist in Health Matters.

The Young Men's Christian Associations of this State have pledged their co-operation in the war on disease and will take steps to improve the sanitary conditions in their various cities. The Danville Association has been the first to get actively to work, and has arranged a series of public lectures to be given in their auditorium. Some prominent health authorities will speak on these occasions.

Dr. J. Shelton Horsley

Narrowly escaped death on the sixth of this month when his automobile was caught between two street cars. It seems almost a miracle that he escaped with only a few scratches and cuts about the face, as his auto was smashed almost into kindling wood.

Dr. Charles H. Mayo,

Of Rochester, Minn., who recently underwent two operations in New York City while en route to his home from a medical meeting in Washington, we are glad to note, is reported as much improved.

A New Hospital,

Now in process of construction, is to be opened in Harrisonburg, Va., about the first of March, 1912. Twenty thousand dollars was willed to the hospital three years ago by Mr. W. S. Leake, and the rest of the money has been raised by subscription. Several rooms have been endowed by citizens and local societies and churches. The grounds of the hospital adjoin those of the State Normal School.

The American Journal of Surgery, New York,

Will shortly publish an issue to be known as the "Special Western Number." Contributors to this issue will be surgeons of international reputation and residents of the Western or Middle West States. The variety and nature of the subjects to be discussed should make this issue of especial interest to all surgeons.

Married—

Dr. R. H. Newman, Cleveland, Va., and Miss Lucy Gray, Lebanon, Va., December 19, 1911. Dr. Newman is a graduate of the University College of Medicine, Richmond, of the class of 1910, and one of the prominent young physicians in his section.

Obituary Record.

Dr. Andrew Davieson Estill,

After being in bad health for several years, died at his home in Lexington, Va., December 25th. He was a son of Dr. J. M. Estill, and was born in Tazewell, Va., April 22, 1854. He studied medicine at the University of Virginia and Jefferson Medical College, graduating from the latter in 1890. He was a useful and public-spirited citizen, and in addition to his duties as a physician, was coroner and health officer for Rockbridge County, and formerly Chairman of the Board of Health of Lexington. He was a Master and member of his local and State Medical Societies. His widow, who was Miss Clara Davidson, of Lexington, survives him.

Dr. T. M. Deitrick,

One of the oldest and best-known citizens of Henrico County, died at his home near Lorraine, Va., January 3d, aged 72 years. Having been in bad health for some time, his death was not unexpected. He was a veteran of the War Between the States, in which he achieved great distinction. He retired from the active practice of his profession a number of years ago. Several sons and daughters survive him.

Dr. Joseph V. Milton

Died in his home at Lacey Springs, Va., December 16th, after a brief illness from pneumonia. He was born near Hamilton, Va., in 1876. After some time spent at the Danville Military Institute, he attended the University of Maryland, graduating in medicine in the class of 1901. He was a member of the Medical Society of Virginia and was prominent in the profession in the Northern section of the State. He is survived by his wife and a large family connection.

Dr. Orville Layne Rogers,

A son of the late Dr. Orville T. Rogers, and one of the prominent physicians in his section, died at his home, Covington, Va., December 26th. Born in Alleghany county, Va., July 25, 1859, he graduated in medicine from Vanderbilt University in 1881. He was a member of the Medical Society of Virginia, a surgeon for the Chesapeake and Ohio Railway, and coroner for Alleghany county. His widow and two sons survive him.

Dr. David F. May,

Probably the oldest practicing physician in Petersburg, Va., died at his home in that city December 18th, after a short illness, though his health had been feeble for some time. A daughter survives him. Dr. May was the first superintendent of Piney Grove Hospital for colored insane in Richmond, which institution was the predecessor of the Central State Hospital.

Dr. James L. Munsey,

Of Pearisburg, Va., a prominent physician of Giles county, died December 29th, as the result of being thrown from his buggy near Pembroke. He was forty-five years of age, and received his medical education at the University of Maryland, from which he graduated in 1892.

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ANALYSIS OF THE LAST FIFTY CASES OF GOITRE OPERATED ON AT ST. LUKE'S HOSPITAL.*

By STUART McGUIRE, M. D., of Richmond, Va.

Nineteen years ago when the University College of Medicine was established I was appointed assistant to my father, and my principal duty was to provide material for his weekly clinic. On two or three occasions I had a case of goitre for him, but he always found some excuse for not operating. Finally one night he called me into his office and said: "Stuart, don't give me any more cases of goitre in my clinic. I once operated on a case and it was the most bloody, barbarous and unsurgical procedure I ever attempted. Every man must be taught by his own experience, but if there is one thing you can learn from me it is not to operate for goitre."

This advice was good for its day and generation. The great Kocher's mortality in his first seventy cases of simple goitre was 40 per cent., and Charles H. Mayo's mortality in his first sixteen cases of ex-ophthalmic goitre was 25 per cent. It is no wonder that at one time the operation was regarded as unwarranted by the majority of surgeons, and it is not surprising that there are still to-day some among the older practitioners who hesitate to advise a patient with goitre to seek operative relief except as a last resort.

Times have changed and the once formidable operation has been rendered comparatively simple and safe in experienced hands. Kocher, with a courage that seems marvelous to the present generation of surgeons, persevered in his

work until he finally established a technique that has *reduced the mortality in his last one thousand operations for goitre to four-tenths of one per cent.*

This was accomplished by:

1. Early operations on more favorable cases.
2. Improved aseptic methods to prevent infection.
3. More skilful administration of anesthetics.
4. An exposure which gave ability to control hemorrhage and avoid injury to certain important structures of the neck.

Six or seven years ago I became convinced from Kocher's writings that the operation of partial thyroidectomy was advisable in certain conditions. I have now operated on more than one hundred cases of goitre, embracing practically all types of the disease without a single death and with most satisfactory symptomatic results.

Despite the low mortality of the operation as reported by numerous surgeons, I do not think a patient should be treated surgically until medical measures have been tried and proven to be inefficient. From personal observation I am satisfied that at least one-half of all patients suffering with both simple and ex-ophthalmic goitre will get well without operation. Whether their recovery is due to the remedies prescribed by the physician or to the inherent tendency of the system to overcome an abnormality is not a material question. The practical fact is that these patients should be treated along accepted lines and given a reasonable time to see what Nature will do for them before they are subjected to a surgical risk. If, however, they fail to improve or their symptoms get worse, then an operation should be advised before complications develop, or incurable structural changes occur in the heart, eyes or other organs. In other words, the surgeon should not operate on a case too soon, and the physician should not treat a case too long. It is a pity

*Read before the forty-second annual meeting of the Medical Society of Virginia, at Richmond, Va., October 24-27, 1911.

that there is not a better understanding between the physician and the surgeon in the treatment of the disease, as each has a distinct and separate field of work, and each accomplishes results the other could not hope to secure.

The surgeon should not underestimate the value of medical treatment. He should remember he only sees the cases in which failure has resulted and is ignorant of the cases in which cures have been effected. On the other hand, the physician should not criticise the surgeon for operating on so many patients. He should remember that practically all his cases have been treated medically without success and have been referred to him because they could not be cured without the use of the knife.

The medical treatment of simple goitre consists in placing the patient under the best possible hygienic conditions. This is especially the case in the symmetrical enlargement of the thyroid gland which is frequently seen in girls about the age of puberty. The patient should have proper food, pure drinking water and an abundance of fresh air. Regular hours of rest should be prescribed and over-exertion and mental excitement carefully guarded against. In the parenchymatous type of the disease the internal administration of an active preparation of thyroid extract does much good. If it fails, arsenic and iodide of potash should be tried. The local use of tincture of iodine, especially when applied with cataphoresis, is a remedy of recognized value. The injection of a solution of carboic acid as advised by Ochsner is dangerous and should not be employed. As simple goitre causes mechanical symptoms, the patient is often the best judge as to when the disfigurement or discomfort it produces is sufficient to justify an operation. The danger of malignant degeneration, however, must not be left out of consideration.

The medical treatment of ex-ophthalmic goitre consists primarily in rest. If possible, the patient should be placed in a hospital and for a time confined to bed. An ice-bag over the heart is often of temporary benefit. Roger's and Beebee's serum gives good results in selected cases and should be used where indicated. Forcheimer reports cures from neutral preparation of hydro-bromate of quinine. He advises that it be given four times a day in five-grain doses. If there is no improvement in forty-eight hours he adds one grain of ergotin to each capsule. Belladonna given hypodermically in

the form of atropia is a remedy of recognized value. X-Ray exposures sometimes result in marked benefit when everything else fails. The local use of iodine and the internal administration of thyroid extract are, of course, to be avoided.

If medical treatment fails to effect a cure in a reasonable time, then the case should be treated surgically. Delay is more dangerous in exophthalmic than in simple goitre as the symptoms are not due to pressure but to poison, and if hyperthyroidism is permitted to continue there will be both increased risk and less satisfactory results from the operation.

If it is decided to do a partial thyroidectomy, it is not well to tell the patient in advance the day and hour fixed for the operation. In some cases where there is great fear of the operation it may be justifiable to practice the method of Crile which he calls "stealing the gland." The patient is told that before resorting to an operation it has been deemed best to try the Inhalation Treatment. Every day at a certain hour the anesthetist goes to the patient's room, places a mask over his face and for ten minutes allows him to inhale some one of the essential oils, such as eucalyptus. The day set for the operation, the relatives, of course, being informed of what is to take place, the treatment is given as usual, only ether or chloroform is slowly substituted and the patient put to sleep without knowledge that the operation will be done that day.

The operation is most conveniently and safely performed with the table in a reverse Trendelenburg position. The elevation of the patient's head causes a certain degree of anæmia which reduces the tendency to bleed and lessens the amount of the anesthetic necessary to produce unconsciousness.

A transverse collar incision is made through the skin and platysma over the most prominent part of the goitre, and these two structures reflected to expose the underlying muscles. The sterno-hyoids and sterno-thyroids are separated in the middle line to expose the gland. This may give sufficient room to permit the delivery of the tumor, but often it is necessary to divide the muscles transversely near their upper insertion in order to give a safe working field.

If the goitre is of the circumscribed variety, the encapsulated mass should be enucleated, the bleeding arrested and the cavity closed by buried sutures. If the goitre is of the diffuse

variety, the affected lobe and isthmus should be excised by ligating the superior and inferior thyroid arteries and dissecting it from the posterior capsule.

Hemorrhage should be minimized by catching vessels before or immediately on division. Removal of the parathyroids should be avoided by preserving the posterior capsule which covers them. Injury to the recurrent laryngeal nerve should be guarded against by carefully exposing the inferior thyroid artery and ligating it close to the pole.

After tying all bleeding points, drainage should be inserted, the divided muscles sutured and the skin neatly approximated.

In order to bring out some interesting and practical facts with reference to goitre, I have made a brief analysis of the last fifty cases operated on at St. Luke's Hospital. As only white patients are admitted to the institution nothing with regard to the influence of race on the occurrence of the disease can be deduced. I am satisfied, however, from my experience in other hospitals that goitre develops as frequently in the negro as in the Caucasian.

The fifty cases came from six different States. The number is so few and the territory covered so large that no conclusions are possible with reference to the influence of geographical location. Four-fifths of the cases came from cities of 10,000 population, or over.

Of the patients, seven were men and forty-three were women, showing that the disease is most frequent in the female. The youngest patient was seventeen and the oldest sixty-one, the average age being thirty, showing that it is a disease of middle life.

Thirty-one cases were simple goitre, causing only mechanical symptoms. Nineteen were of the ex-ophthalmic type attended by marked symptoms of hyperthyroidism. The proportion of the latter to the former is much greater than usually reported and shows that the profession in my territory is not yet educated to the point of referring early and easy cases to the surgeon, but as yet only send the patient whose need is urgent.

In thirty-six cases the operation was on the right lobe, in seven on the left, and in seven on both lobes.

The greater frequency of the disease on the right side of the thyroid as compared to the left is noted by all observers, but so far no satisfac-

tory explanation on either anatomical or physiological lines has been given.

The anesthetic employed was cocaine in one case, chloroform in thirty cases and ether in nineteen cases. Cocaine was used in the one instance because the patient was obese, had a bad heart and protested against taking a general anesthetic. Chloroform and ether were used in the other forty-nine cases.

From careful observation I am convinced that patients with goitre take a general anesthetic as well as any other class of cases and, as the operation can be done more rapidly and thoroughly with less strain on the patient and the surgeon, I advocate its use unless there be some special contraindication. Whether the agent employed be chloroform or ether should be decided not by considering the anesthetic but the anesthetist. In the first of the series reported I had a man who had great experience in giving chloroform. He left my service and was replaced by a woman who had long training in the administration of ether. In the hands of experts I found both agents safe and satisfactory.

In the fifty cases reported, fourteen operations were enucleations of circumscribed tumors, and thirty-six were excisions of enlarged lobes. The amount of the gland removed varied from a slightly enlarged lobe weighing one or two ounces to a huge mass weighing seven pounds. The average time taken to complete an operation was thirty minutes. The average confinement of the patient to bed was seven days and the average stay in the hospital was two weeks.

The Post-Operative Complications Were as Follows:—One patient had huskiness of the voice for a week or ten days, showing I had irritated but not permanently injured the recurrent laryngeal nerve.

One patient had infection of the wound due to the imperfect drainage of a large cavity left after the dislocation of an intrathoracic goitre.

One patient had a severe hemorrhage shortly after recovery from the anesthetic, requiring the wound to be reopened and the bleeding arrested. This accident was probably due to including some muscular tissue in one of the ligatures, which contracted and pulled the suture off.

Two patients had hyperthyroidism, one mildly, the other severely. They both recovered in forty-eight hours. Whether the symptoms were due to absorption of the thyroid juices from the wound or whether they were due to

"psychic excitation," as claimed by Crile, I do not know. The surgeon should try to minimize the frequency and severity of this complication by handling the gland gently during the operation to avoid expressing its juices, and also by endeavoring to allay the patient's fear before the operation to avoid the possibility of hypersecretion from psychic influences. If pain, fright or mental emotions are capable of causing hyperthyroidism, it is an argument in the favor of the use of a general anesthetic.

Not long ago I had a case at the Virginia Hospital which strongly substantiated Crile's theory. The patient was a woman on whom I had operated two years before for ex-ophthalmic goitre and had effected a symptomatic cure. She came back to the hospital for the repair of the perineum and the correction of a displacement. When the time came for the operation she tried to back out, but I urged her on, and she went to the anesthetizing room in a bad state of fright. The operation was simple and uncomplicated, but in a few hours she developed high fever, was wildly delirious and her heart was so rapid that her pulse could not be counted. Here was a clear instance of hyperthyroidism developing from the excessive secretion of the thyroid gland stimulated by the patient's psychic condition. In this case there was no possibility of thyroid juices being absorbed by fresh surfaces as the operation was not on the neck but in the pelvis.

The final results of the operations were as follows:—In thirty-one cases of simple goitre where the symptoms were due to mechanical pressure, there was complete relief in every instance.

In the nineteen cases of ex-ophthalmic goitre where the symptoms were due to hyperthyroidism, there was symptomatic cure in sixteen cases, marked benefit in two cases and failure to receive any benefit in one case.

In stating that a symptomatic cure was effected in sixteen cases, I mean that the patients were relieved of nervousness, tremor, tachycardia, and digestive disturbances and that they regained their usual weight, strength and spirits. The ex-ophthalmos was improved in a few of the early cases, but remained as a permanent disfigurement in the majority of instances. All of the patients still seem to have some irritability of the nervous mechanism regulating the heart, for while the pulse rate is normal under usual conditions it temporarily

becomes abnormally rapid on unusual excitement or exertion.

In the two cases reported improved but not cured, the symptoms all continue but in much less intensity. Failure to effect a cure was due to not removing enough of the thyroid gland. If in the future the patients are not satisfied with their condition a second operation can be done.

The amount of the thyroid secretion is not dependent on the anatomical bulk but on the physiological activity of the glandular tissue; hence, in every case it is a question with the surgeon of how much to take out and how much to leave in. If an error is made it had better be on the side of conservatism as it is easy to take out more and impossible to put back any of this tissue which has such an important effect on the physical nutrition and nervous equilibrium of the individual. Personally, however, I must say that with increasing experience I find myself taking out more and more of the gland and have never seen any bad results.

In the one case reported where the patient received no benefit, the fault was in the diagnosis, not in the treatment, as the case was not one of hyperthyroidism but of neurasthenia. The patient was a woman of thirty-two, referred to me by a prominent specialist of this city. She had very prominent eyes and a goitre the size of a lemon. She was nervous, tremulous and suffered with tachycardia on slight exertion. I operated on her and removed the right lobe and the isthmus. My pathologist examined the specimen and reported that the tissue did not show the cellular hyperplasia usually seen in hyperthyroidism and he believed it was a case of simple goitre. A more careful review of the patient's history and symptoms made it apparent that the woman was a victim of neurasthenia and the goitre was but a coincident trouble. Failure to secure the expected benefit from the operation was a further corroborative evidence.

THE MENTAL DEFECTIVES.*

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The term mental defectives is used in this paper in its generic sense, embracing those individuals who have no intelligence and those whose intelligence is decidedly subnormal; that

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is, the idiot, the imbecile and the feeble-minded. All these represent various degrees of arrested development or amentia that depends upon either a congenital or an acquired defect or disease of the brain that prevents or checks its normal evolution, involving to a greater or less extent all the cerebral functions.

Some definitions or differentiations of the above terms should perhaps be made in the beginning. "Amentia", to quote Dr. James T. Searcy, of Alabama, an able psychiatrist, "is a comprehensive term which has been used to designate an all around want of normal mentality which has existed all the person's life, or since he has been old enough to have his mentality graded." In other words, "amentia is want of normal efficiency in all departments of thought." An idiot is "an ament who cannot be taught to be useful in any way to himself or to others, one who is utterly helpless and dependent"; an imbecile is "an ament who can be taught to do useful things under the immediate care and direction of others"; a feeble-minded person is "one who can be trained and educated to be quite useful and sometimes can work independently of outside help, so the work is not too complicated." In addition to these classes, I shall give some consideration to the simply backward or abnormal child and to the insane. De Moor defines abnormal children as "those afflicted with anything whatever that unfavorably affects their lives in relation to the social medium in which they live."

PREVALENCE.

"Isn't it time," asks a noted writer, "that we sat down quietly, rationally and unafraid to discuss the problem of our human misfits?" We have no accurate statistics as to the number of each of the several classes of mental defectives. It is impossible to secure full information, for several reasons, one being that there has not been generally adopted a satisfactory test, such as the Binet-Simon or other mental test, by which may be measured varying degrees of mental capacity, or determined the grade of mental deficiency, in any given case; another being that many of such persons are hidden away, as it were, in the family, constituting a "skeleton in the closet." We know, however, that the blight of feeble-mindedness, idiocy, insanity, etc., exists in every class and condition of society and among all races of mankind.

The census of 1890 placed the number of feeble-minded persons in this country at 95,000,

and that of 1903 at about 155,000. A careful statistician has recently estimated the number at present to be about 200,000, less than 20,000 of whom are cared for in special institutions. About three-fifths of those in institutions are epileptics. Ten years ago the superintendents of American institutions for the feeble-minded thought that a very conservative estimate was one to five hundred of the general population. According to the opinion of Dr. Franz, of the Government Hospital, at Washington, who has made a close study of this subject, the proportion is one to three hundred of the general population. These estimates indicate an increase out of proportion to that in the general population. Taking New Jersey as an example of the several States, figures regarded as reasonably accurate show that the number in that State has doubled in a single generation. The same or worse conditions exist in other States and countries. It is estimated by careful students that there are in this country at least 300,000 persons who are either insane or decidedly feeble-minded; that is, in the ratio of one such person to every 300 of the general population. Dr. Martin W. Barr, a recognized authority, recently said that in the United States the rate of increase within the past decade, of insane and feeble-minded is not less than 155 per cent. Seven years ago the Royal Commission of England estimated that in that country the number was increasing at double the rate of increase in the general population.

INCREASE OF INSANITY.

The computed increase of insanity within the past half century, in this country, taken as a whole, has been about 300 per cent., which according to the census reports, is far in excess of the increase in the general population, that being only about 138 per cent. Prior to 1880 the census enumerations were incomplete and incorrect; therefore, these figures are misleading, yet from the best obtainable data there has been a gradual increase of insanity throughout the country. From 1904 to 1910 the population of the United States increased eleven per cent., while the number of insane persons was augmented during the same period by 25 per cent. December 31, 1906, there were reported 150,151 inmates in the hospitals for the insane in this country. January 1, 1910, there were 187,454, an increase of 37,303 in six years. During the past quarter of a century there has been a rapid increase in the hospital accommo-

dations for the insane, still the increase in such accommodations has not kept pace with the increase in the insane population. From 1900 to 1910 the population of Rhode Island gained 26.6 per cent., while for the same period the number of patients in the State Hospital for the Insane gained 53.1 per cent. In 1867, the proportion of insane persons in New York and the New England States was about one to sixteen hundred of the general population. Dr. A. W. Ferris, ex-president of the New York Commission in Lunacy, reports that, at this time, there are in that State one insane adult in every 279 of the population, and that insanity has increased about 104 per cent. since 1890, while for the same period the increase in the general population has been 47.6 per cent. Dr. Searcy, superintendent of the Alabama hospitals, says that in the past ten years the increase of admissions into hospitals of that State was 45 per cent., while the population increased about 16 per cent. In his book on "Mental Deficiency", Tredgold states that "a greater number of defectives are to-day resident in our institutions than was the case a generation back, and the exigencies of modern life must undoubtedly lead to an increase of this number in years to come." The increase in the accessions to the number of insane in the hospitals gives an approximate idea of the growing prevalence of insanity.

Statistics gathered from the annual reports of the Virginia hospitals show that during the past forty years there has been a rapid increase in the number of persons who have been adjudged insane and sent to our institutions. The figures tell enough to cause one to pause and think, and think seriously. The number of first admission cases—that is, different persons, or those who for the first time were committed to one or other of the State hospitals, during each decade—is as follows:†

From 1870 to 1880, white 950, negroes 313, total 1,263; from 1880 to 1890, white 1,738, negroes 1,127, total 2,865; from 1890 to 1900, white 2,426, negroes 1,523, total 3,949; from 1900 to 1910, white 4,550, negroes 3,011, total 7,561. That is, there were six times as many *individuals* sent for the first time to the hospitals between 1900 and 1910 as between 1870 and 1880—five times as many white persons

and ten times as many negroes. Therefore, in a single generation the number of insane persons sent to the hospitals had increased about 500 per cent.

If we take the number of *cases*, that is, both first admission cases and readmissions—persons sent to the hospitals more than once—the figures still bear out the fact that each succeeding period has brought its growing burden upon the State in the way of increasing numbers of insane committed to its jurisdiction. From 1870 to 1880, the total number of cases was 1,867—1,432 white and 435 negroes. From 1880 to 1890, total 4,124—2,612 whites and 1,512 negroes. From 1890 to 1900, total 5,832—4,023 whites and 1,809 negroes. From 1900 to 1910, total 9,735—6,176 whites and 3,559 negroes. It is seen that during the last decade there were admitted into the hospitals more than five times as many cases as during the first decade. With the whites the number was a fraction over four times as large, and with the negroes a fraction over eight times as large. The number of patients in the State hospitals at the end of each decade was as follows: October, 1870, 543 whites, 150 negroes, total 693; October, 1880, 809 whites, 326 negroes, total 1,135; October, 1890, 1,254 whites, 579 negroes, total 1,833; October 1900, 1,912 whites, 868 negroes, total 2,780; October, 1910, 2,733 whites, 1,148 negroes, total 4,181. Therefore, there were six times as many patients under State care October, 1910, as there were October, 1870—five times as many whites and nine times as many negroes. At present there are 4,600 patients—3,120 whites and 1,480 negroes in the five State hospitals, as against 2,780 eleven years ago, or a total increase of 1,820, or a net yearly average increase of 165. There are no insane in any jail or almshouse in the State.

Now as to the increase in the general population, as compared with that of insane persons, in Virginia: It must be remembered that no account is taken of the insane who were in the jails some years ago (none of any consequence being kept in jail for the past several years), or of those who were or are now at home or in private sanatoria. The number is not inconsiderable, and would lessen to some extent the following percentages: At the end of the fiscal year 1870, the ratio of insane persons in the State hospitals to the general population was one in 1,746, (this may be incor-

†When the reports failed, as was the case in some instances, to state whether the admissions were first or second, etc., the number of first admissions was approximated.

rect, the census at that time being inaccurate); 1880, one in 1,332; 1890, one in 903; 1900, one in 667; 1910, one in 493, the white being one in 465 and the negroes one in 540. From 1870 to 1880, the increase in the general population was 23.3 per cent., while that of the number of registered insane was 64 per cent., (these figures may be unreliable on account of an incorrect census); from 1880 to 1890, the population increased 9.5 per cent., while the number of insane increased 61.5 per cent.; from 1890 to 1900, the increase in the general population was 11.9 per cent., and the number of insane was 51.7 per cent.; from 1900 to 1910, the general population was augmented 11.2 per cent., while the insane advanced 50 per cent.

By way of comparison, January 1, 1910, the number of insane in institutions, per 100,000 of population, was, in Massachusetts, 344.6, the largest; in New York, 343.1; in Maryland, 245, the largest for the Southern States; in Alabama, 95.4, the smallest; in North Carolina, 114.3; in South Carolina, 101.7; in Tennessee, 100.9; in Virginia, 176.4. The larger ratio for the Northern and Eastern States is due in part to larger alien and heterogeneous population as compared with the larger relative proportion of native born in the Southern States.

The increase of insanity in Virginia, as well as elsewhere, is not as great perhaps as the foregoing figures indicate, for the following reasons: As our knowledge of medicine, particularly of psychiatry, and, consequently, our more accurate methods of diagnosis, has increased, a relatively larger number of persons have been found suffering from mental disease and committed to the hospitals. There has been a gradual recognition of the advantages the hospitals offer, and the old aversion to them has practically disappeared, resulting in comparatively more patients than formerly being committed to their care. In fact, it is often the case that persons, such as those suffering from the ravages of old age, or from the acute effects of alcohol, are sent to the hospitals for the insane, when they might have been cared for at home. The average duration of the life of the insane in the hospitals has during the past quarter of a century been prolonged by about eight years, while that of the general population has been prolonged about four years; hence there has accumulated in the hospitals a large number of old and chronic cases. Years ago the insti-

tutions did not provide sufficient room even to crowd in all who sought admission, many having to remain either at home or in the jails and almshouses, and of course are not included in our statistics, yet there are still many recognizable as insane who are not placed in institutions for the insane. These reasons cannot, however, fully explain the growing increase of insanity from year to year, as shown by the hospital records. There has not been such radical change in such conditions as to account for the increasing aggregation in our hospitals. One is forced, therefore, to the inevitable conclusion that there has been an increase, though not as rapid as the statistics seem to prove, in the number of persons becoming actually insane or so mentally disturbed that it becomes necessary to place them under hospital care and treatment. At all events, let us try to get comfort from what Lugaro says in his work on "Modern Problems in Psychiatry." He cites certain facts which convince him "how unfounded is the pessimistic prejudice of those who, mistaking an increase of the numbers of persons under asylum treatment for a real increase in insanity, make statements calculated to alarm the public and accuse civilization of exacting from the human brain an excessive amount of activity." But we have the record for Virginia and from it only one conclusion can be drawn: That the insane population has increased relatively more rapidly than the general population. The annual cost to Virginia to care for her insane is now half a million dollars, and as the years go by will be necessary to enlarge the amounts for additional accommodations and maintenance—unless more active and advanced measures are adopted to prevent insanity and mental degeneracy. Indeed, to keep pace with the growing increase of the hospital population, that is, to provide ample accommodations for the annual net increase of 165 should cost not less than \$50,000 a year, to say nothing of the additional amount required for maintenance.

I dare say that few people have any idea what Virginia has spent annually for the commitment of the insane and their care in the jails, etc., (that is, outside of the State institutions). From 1870 to 1880, the amount aggregated \$222,515.16; from 1880 to 1890, \$289,730.51; from 1890 to 1900, \$242,828.22; from 1900 to 1910, \$62,073.36—a total in forty years, of \$817,147.25. It will be ob-

served that from 1900 to 1910 there was a great falling off in the amount. This was effected through lessened cost of commitment under the new law, increased accommodations at the hospitals, more promptness in transferring patients to the institutions and the growing sentiment against confining insane persons in jail. From an economic standpoint, it is very much less expensive to care for an insane person in one of our State hospitals than it is in jail.

THE FEEBLE-MINDED IN VIRGINIA.

Through the efforts of Dr. J. T. Mastin, the efficient Secretary of the Virginia State Board of Charities and Corrections, who has made, in accordance with a joint resolution adopted by the last General Assembly, an investigation of the number, condition and whereabouts of the aments of all classes, we have the information that, including all degrees of mental deficiency, from the low grade idiot to the high grade imbecile, there are in the State about 6,000. The proportion, therefore, to the general population is about one to 350. Of these, about 4,500 are idiots or low grade imbeciles, and about 1,500 high grade imbeciles. No simply backward children are included in his estimates. The most distressing feature is that 300 or more of these unprofitable citizens are women of child-bearing age, who are without custodial care. Many are in the almshouses, orphan asylums, jails, reformatories, and some in the penitentiary. There is no special institution in the State built, organized and conducted to meet their peculiar needs. In fact, with one or two exceptions, every Southern State has been derelict in its duty in this regard. The North Carolina Legislature at its last session saw its duty and did it by making provision for the establishment of an institution for the feeble-minded.

It is in private families that most of the feeble-minded are to be found. Many a home, already severely taxed to provide support, is virtually pauperized by reason of the expense incident to the care of an idiot or feeble-minded member. The presence in a household of a mental defective is also a constant cause of heartaches and anxiety. Who can tell the mental anguish of a mother or a father of an idiot or imbecile child? There cannot be peace of mind in a family having such an ever-present sorrow. To the community the presence of such individuals is a perpetual menace, a constant

source of trouble and danger. Indeed, this army of defectives or defective-delinquents, practically all of them being unable to contribute materially to their own support, to protect themselves or to control their conduct, constitutes a serious problem. The cost to the family and to the State, under present conditions, is so great, and the effect so far-reaching, that they cannot be approximated.

MENTAL DEGENERACY AND CRIME.

It is a matter of common observation by penologists and sociologists that there is frequently a close relationship between crime, immorality and mental inferiority. Such crimes as theft, incendiarism, rape, or attempted rape, and even murder, are frequently committed by individuals who are half-witted. It is an indisputable fact that a large percentage of abandoned women, wayward boys and girls, and other moral delinquents, are recruits from the ranks of the feeble-minded, who are incapable of resisting temptation.

Dr. Goddard, of that great institution for the feeble-minded at Vineland, N. J., said before the Virginia Child's Welfare Conference, last May, that at least twenty-five per cent. of the children in our reformatories are feeble-minded. From mental tests made recently in fourteen boys, taken at random, at the Laurel Reformatory, this State, all tested below normal mentality for their respective ages; in some the mental defect was quite marked. Studies made some years ago of the inmates of the New York State Reformatory revealed the fact that about one-fifth of them were decidedly mentally deficient. A similar investigation by experts brought out the fact that twenty-one per cent. of the population of the Indiana Reformatory were weak-minded. An examination of the mental condition of the nearly one thousand convicts in the penitentiary of that State resulted in finding that twelve per cent. were insane, epileptic or mentally deficient. In a recently published work by reliable authors, it is estimated that ten per cent. of the inmates of the prisons of England are mentally unsound. I have no doubt that if careful examinations were made by psychiatrists, there would be found quite a number of inmates of our own penitentiary who are mentally deficient or have stunted intellects. Unless restrained and protected the "moral imbecile," or the imbecile without moral ideas, is especially foredoomed to a life of vice and crime.

In this connection it might be well to call attention to certain types of psychopaths or abnormal prison individuals who roam at large until they commit some outrageous act or crime that shocks the community. It is then that their real mental condition is investigated, with the resultant opinion of insanity experts that they are mentally deficient or insane and dangerous. It is criminal negligence to allow such defectives to remain free in the community. They should be apprehended, examined, and, if need be, placed under proper and safe supervision. Were this done, many a useful life and much valuable property, and also expenses incident to legal proceedings, would be saved, to say nothing of the often unjust criticism of the "insanity plea" and the opinion of the examining alienists. Such cases have come under my personal observation.

CAUSES—HEREDITY, ETC.

A brief consideration of the more important causes of mental degeneracy, disease and weakness will suggest the lines along which our efforts should be directed. The predominating cause is to be found in bad heredity,—a blight passing directly from generation to generation, or perchance skipping a generation. In the term heredity I include both similar heredity, that is, the transmission to the offspring of the same form of mental or nervous defect or disease that existed in the parent, and dissimilar, that is, where the parent suffered from a different form of defect or disease from that which afflicts the offspring. In seventy-five per cent., maybe more, of all the various types of mental, physical and moral defectives there is a history of idiocy, imbecility, feeble-mindedness, epilepsy, insanity, alcoholism, syphilis, or some other degenerative "taint" in the ancestors of such afflicted persons. Profound thinkers have said that most of the human "misfits" are born and comparatively few are made. In sixty-five per cent. or more of feeble-mindedness there is a defective hereditary strain, direct or collateral, similar or dissimilar. The same is true of epilepsy; and in the case of insanity about two-thirds start life with more or less defect or mental unbalance. A child coming into the world with mental inadequacy or with a subnormal or weakened constitution, as result of ancestral mental defects or disease, or of epilepsy, alcoholism, tuberculosis, cancer, syphilis, or other constitutional disease, starts upon a maimed existence, so handicapped that he cannot withstand the

stress and strain like a child whose parents are normal and healthy and whose environmental conditions are good. The highest possible standard of physical motherhood is one of the most essential conditions to race improvement; hence, the condition of mothers should be well guarded during gestation.

There are no doubt sporadic cases of mental infirmity and idiocy that cannot be charged to a bad heredity, but it is comparatively seldom that a mentally defective child is the offspring of physically and mentally normal parents. There is, of course, a certain proportion of cases that are brought about *in utero* or that can be traced to accidents at birth, injuries resulting from instrumental or complicated delivery, or to head injuries, or to diseases in infancy or early life, such as meningitis, scarlatina, measles, etc., which cause cellular disintegration or non-development of brain structure. Severe shock from fright—psychical trauma—may also be an etiological factor in cases of arrested mental development, as well as epilepsy and insanity. Bad environment and poor nourishment, too, sometimes occur as contributing causative factors, especially in the predisposed. It is said that in France, where the residents of the Commune of Batz on the Loire Inferieure acknowledge and bow to the laws of rational living, mental defect is absolutely unknown, and the number of children born is about the ordinary (Barr). Hon. E. P. Bicknell, lately Secretary of the Indiana Board of Charities, and an eminent sociologist, says that "while it is easily possible for parents of normal faculties, through dissipation, vice or disease, to produce feeble-minded offspring, there seems no method by which the tendency can be reversed, and degeneration thus easily accomplished displaced by regeneration and restoration in succeeding years."

The union of two stocks when in either or in both, there is insanity or nervous disease, feeble-mindedness, etc., usually results in some or all of the offspring being in some way defective. Dr. Johnstone, that mastermind of the Vineland Training School, New Jersey, says that his investigations show that where both parents are feeble-minded all the children are always feeble-minded; that alcohol, syphilis, tuberculosis and illegitimacy are found in every one of the degenerate families; and that much of the crime of the petty sort, and even arson and murder are committed by semi-responsible fee-

ble-minded persons. In or out of wedlock the mental degenerates frequently become parents of children who are destined to be feeble-minded, idiotic, epileptic, insane, deaf-mute, blind, inebriate, paupers, tramps or criminals, and charges upon the family or the community. It has often been observed that there is a tendency in degenerate families to excessive production. The sexual instinct is usually more pronounced and certainly under less control of the will and reason in the mentally weak than in the individual with higher intellectual endowment. Dr. Johnstone has observed that the progeny of the feeble-minded mother is nearly double the average number of offspring of the normal mother, and that a relatively larger number of such defectives are born out of wedlock. Dr. J. G. Kiernan, of Chicago, one of the most accurate observers and profound thinkers in this country, says that in ninety degenerate families that he has investigated the average number of children was eleven, and that multiple births occurred more than ten times as frequently as in the general population. Dr. A. W. Wilmarth, superintendent of the Wisconsin Home for the Feeble-minded, says that the largest family of defectives coming under his observation was eighteen. I have known ignorant negro women in the Central State Hospital, Virginia, who had been the mothers of twenty-odd children. It has been said that "it appears that while nature tends to check increase in the case of gross bodily infirmity, it is otherwise where only the higher faculties are involved in the degenerative process."

One of the most potent causes, direct or predisposing, of nervous and mental diseases and defects is syphilis. Dr. Isadore Dyer, of Tulane University, truly says that "the by-effects of this disease as expressed in late nervous affections and in the evidence of hereditary influence are constantly on the increase, and the insane asylums everywhere are burdened with the victims of this disease, either suffering the penalty of their own sins or the transgressions of their ancestors." Furthermore, as is well known to the medical profession, venereal diseases are responsible for a large number of premature births, deaths in infancy, blindness, and various other forms of human infirmity and decay. Syphilis is indeed a child destroyer.

Alcoholism and drug addiction are also responsible for much of the mental and nervous affection, to say nothing of moral degeneracy

and crime. Alcoholics and drug habitues are the fathers and mothers of many of our insane, feeble-minded, epileptics, paralytics, etc. Surely, it is a solemn doctrine that "the fathers have eaten sour grapes and the children's teeth are set on edge."

PREVENTION.

Having described what is meant by an ament or a mental defective and told of the prevalence, the chief causes and terrible effects and the heavy burden on the family and the community imposed by idiocy, imbecility and feeble-mindedness, epilepsy and insanity, let us discuss briefly some rational remedy for the evil that confronts us. A congenital or an acquired mental defect cannot be cured and normal mentality established, and only a few cases can be improved; therefore, practically our only course is in prevention and custodial care. This statement applies with equal force to epileptics. The subject should be dealt with from two aspects: that of the afflicted person and that of the community, that is, the family of the defective and the public at large. There needs to be a guardianship over such persons. A superior intellect is necessary to guide and protect those who are incapable of self-preservation, or of earning their own living or adjusting themselves to the ordinary environment and conditions, or who are a menace to the community. The State alone is qualified to assume such guardianship. What will the State do about it? The present cost to the State would be inconsiderable as compared with that of the future when the number will necessarily be much augmented unless something is done to check the constantly increasing numbers.

In our present state of knowledge there seem two lines of action that might be pursued with reasonably good results in checking this most subtle form of race suicide; one is to prevent the production of more defectives, and the other is to segregate and give custodial care to those already in existence. No person who is mentally incapable of caring for himself should be permitted to add to his burden or to that of others by bringing into the world others of his kind. The greatest asset of the State is a healthy, normal citizen. Laws, then, should be enacted to prohibit the marriage, certainly during the reproductive period, of the unfit, and as far as practicable to forbid their cohabitation. As sentiment and convenience and self-gratification, rather than science or consideration of

race culture, are the dominating influences in pairing of the sexes, legal restrictions as to selection would undoubtedly meet with disapproval on the part of many who are directly concerned. The clerks of the courts should, nevertheless, be empowered to refuse license to those in pursuit of matrimony until they have given sufficient proof, or at least an affidavit to the effect that they are not unfit for its responsibilities by reason of mental incompetency, habitual drunkenness, epilepsy, etc. Syphilis, too, that great scourge, the pernicious effect of which is so insidious and far-reaching, particularly upon the nervous system. Other venereal diseases should also be a bar. Surely, a syphilitic should not have the right to hand down to posterity a disease that has perhaps been or will be his ruin, for "the effects of such disease is to produce a race of inferior beings by poisoning the sources of life and sapping the vitality and health of the offspring," who in turn, if they become parents, are liable to transmit organic defects and disease to their children. If nothing more is done, a medical certificate as to the freedom from these loathsome diseases should be required by the clerk before the marriage license is granted.

Sterilization—vasectomy for men and fallectomy for women—of epileptics, habitual criminals, imbeciles and persons suffering from recurrent or incurable types of insanity should, under proper legal safeguard and medical advice, be required by law. Such persons are unfit to assume parenthood, hence the power of procreating their kind should be taken from them by the relentless hand of science, under sanction and authority of law. It is doubtful if the public is ready for such an advanced measure; therefore, it should be gradually, cautiously and carefully adopted. However, the legislatures of several States have already authorized sterilization of certain defective persons. There is no question that such laws as those herein suggested would be evaded in many instances, yet they would undoubtedly serve as a means of educating the people regarding prophylaxis, and in a great measure diminish the number of defectives, thereby improving and invigorating the race. In order to enforce the obedience to such laws, it might be well to place the violation of them in the penal code. Certainly any rational person affected with syphilis or other venereal disease, who marries, should be deemed guilty of a felony, and, upon

conviction, severely punished; and any sane person who marries another person known to be insane, epileptic, imbecile, etc., should likewise be made to suffer, and the marriage annulled.

Segregation, custodial care and employment on a colony farm, under control of the State, should apply to as large a number of the feeble-minded, imbeciles, epileptics and confirmed drunkards as possible. It would be a wise and economic public policy to abolish the county almshouses and establish in their stead a dozen district almshouses, where the infirm poor and the destitute idiots could be properly cared for. In a colony for the feeble-minded, many of such defectives could be given manual training and taught to do many useful things about the farm, the house, the shops, etc., thereby contributing largely to the maintenance of the institution.

In this connection, the colony for epileptics should be enlarged, so as not only to relieve the other State hospitals of their epileptics, but to accommodate many of the epileptics, now scattered throughout the State. It would also be feasible to make provision there for the feeble-minded, though a separate institution would of course be preferable. The State Board of Charities and Correction and some individuals who are interested in the welfare of the feeble-minded, as well as that of the State, present and future, have formulated bills to have introduced in the Legislature, the purposes of which are to carry into effect, as far as practicable, the several suggestions made in this paper. Dr. Charles B. Davenport, of the Station for Experimental Evolution, Carnegie Institution, of Washington, says in a paper on "The Origin and Control of Mental Defectiveness," that "in some way or other, society must end these animalistic blood-lines or they will end society."

In order that we may acquire a better knowledge of the causes and the best means of prevention of the various types of mental degeneracy, there should be organized research in State institutions, working under the direction of a department of eugenics and experimental psychology at the State University. There is such appalling ignorance and indifference in regard to the subject that some sort of organized plan should be devised and prosecuted in every section of the country. The American Breeders' Association, in its section on eugenics, is endeavoring to do educational

work along the line of efforts to improve the future generations, and should be supported in such good aims. Eugenics seeks to prevent the production of abnormals in the future.

BACKWARD CHILDREN.

I have not discussed mental backwardness because that is a distinct phase of the general subject of mental defectiveness or deficiency, which would in itself require a lengthy paper. Dr. E. A. Alderman is reported as saying in a recent public address that sixty per cent. of the white children in schools of this State are, by reason of some physical defect, unable to take full advantage of their educational advantages. I am satisfied that quite a large proportion, certainly three or four per cent. of such children suffer also from more or less mental deficiency or backwardness, and consequently, are placed at a great disadvantage in trying to keep up with the classes, as usually formed. These dull children cannot be advanced from grade to grade as the normal children are, and consequently, many of them become discouraged and stop school with a mere smattering of a primary education. Systematic medical inspection of school children should be generally adopted and every physical defect remedied as far as possible. Educators, physicians and others interested in child welfare should recognize the importance, the necessity and the justice of special classes or departments for the training and teaching of the backward children, in order that they may be fitted as well as possible for the battle of life, and for productive citizenship. In an article on "Our Human Misfits," Dr. Woods Hutchinson says, in discussing the prevention of insanity, that "the vitally important fact of the whole situation is that of all those who, under present circumstances, become insane, at least seventy-five per cent. could have been detected by an expert eye before they reached fifteen years of age, and, if curable, given proper training and environment; if incurable, isolated and properly dealt with." There is certainly very much truth in this statement.

CONCLUSION.

If the plans suggested in this paper, which have the sanction of the most advanced thinkers, could be adopted, within a generation or so, the number of mental defectives, insane, epileptics, etc., would be so materially decreased that the problem of dealing with them would be comparatively simple. The problem is now beset with

many difficulties, but it is one of such vast and vital importance that physicians, sociologists and legislators cannot afford to treat it with indifference. It is a reproach to an enlightened people that so little has been done to stem the tide of feeble-mindedness and mental degeneracy. The public should be aroused to a full understanding of the situation. Efforts should be aimed at urging the Legislature to enact common-sense laws to check the propagation of the defectives and to make provision for their segregation and custody.

It is gratifying that the medical profession of the State is manifesting deeper interest in the "submerged tenth." At the recent session of the Medical Society of Virginia the writer introduced resolutions favoring a State colony for the feeble-minded and research in the causes and prevention of mental degeneracy, which were unanimously adopted. A committee was appointed to inform the Legislature of the views of the association as expressed in the resolutions, and to co-operate with other organizations or agencies in an effort to have established a State institution for the feeble-minded.

I am aware that I have presented no original ideas, but it seemed to me worth while to reiterate some important truths which so seriously affect us as a people, with the hope that more general interest may be created and that by earnest, intelligent and united efforts good results may be attained. Let us ever bear in mind the Scriptural injunction: "Ye who are strong ought to bear the infirmities of the weak."

LATER EXPERIENCES WITH SALVARSAN AT THE U. S. NAVAL HOSPITAL, NORFOLK, VA.*

By GEO. B. TRIBLE, M. D., Norfolk, Va.
Passed Assistant Surgeon, U. S. Navy.

Since January 1, 1911, there have been over five hundred administrations of salvarsan by the intravenous method, employing the technique previously described before this society by my colleague, Dr. Garrison. In a number of instances variations from that method were employed, but were found unsatisfactory.

The Schreiber needle was found less useful and more difficult to manage than the canula, and always necessitated the use of a much larger vein than was necessary under the former meth-

*The committee is as follows: Drs. W. F. Drewry (chairman), A. S. Priddy, P. A. Irving, Herbert Old, and R. K. Flannagan.

*Read before the Surgical Section of the Norfolk County Medical Society, at Norfolk, Va., at its December, 1911, meeting.

od and its use was discontinued. It has the advantage of conserving in most instances the permeability of the vein, but ligation of the superficial veins has not caused any impairment of the circulation, so far as could be observed.

No untoward symptoms have been observed, directly traceable to the drug *per se*, or to its administration by our technique.

No direct connection could be established between the severity of the infection and the severity of the reaction following the administration, nor could the reaction be considered as specific in any sense, such as has been claimed by some writers.

The severity of the reaction depends usually upon the temperament of the patient, the rapidity of the flow, and the temperature at which it is administered.

Three administrations have been used in several instances, two doses in all the later cases; a few of the first cases only received one dose.

There has been no evidence to show that a third dose is less efficient than the first or second in clearing up clinical symptoms, and arsenic resistant strain of *Treponema* has in no case developed.

The results of the Wassermann reaction, Noguchi modification, if the securing of a constantly negative reaction is to be taken as a cure, have been distinctly unsatisfactory.

Only about ten per cent. of those examined gave a negative reaction, a number—eight or ten—have returned for examination after a lapse of six or more months from time of treatment; their reactions have been positive in all cases.

Approximately another ten per cent. gave a less marked positive reaction, while some cases gave a more marked positive, especially some two or three weeks after treatment.

One death occurred about twenty hours subsequently to the administration of salvarsan, under the following circumstances. The patient had received one dose, with nothing out of the ordinary occurring. Within a few hours after the second dose, he began to vomit, first gastric contents, then blood, dark and grumous in character, typical coffee-grounds vomit. This became worse and death occurred the next day. *Post-mortem* findings showed a large mass, about three inches in diameter in the mesentery, stomach filled with coffee grounds vomitus, several shallow ulcers on posterior inferior

border of mucous membrane of greater curvature, small ulcers in the duodenum, one large ulcer, about six inches from the pylorus in the duodenum, from which the hemorrhage came that caused this death. Lesions were found in the optic thalami and around the geniculate bodies. Other organs were normal. A careful dissection of the vein used in the intravenous was made. For about two inches above the site of this injection evidence of manipulation could be seen—no thrombosis had occurred. The mass in the mesentery was probably of inflammatory nature, though, of course, its gummatous nature was suspected. Sections showed nothing distinctive; it was plainly non-malignant. This patient never complained of abdominal pain, but questioning revealed that he had suffered stomach trouble two years prior to time of treatment.

In reference to the complications of the organs of special sense, which have been reported from some sources, it would appear that in some instances they are simply reactions analogous to the Herxheimer reaction. *Treponema* being, of course, generally distributed, occur in these organs; their destruction and the liberation of toxins incident thereto, can set up a reactive inflammation which may cause the symptoms noted. We have record of two cases, one case, among the first of the cases treated by Dr. Garrison and myself, which subsequently developed an inflammation of practically all the uveal tract of one eye with ensuing blindness. Another case which came to this hospital, after one dose of salvarsan at the New York Naval Hospital, with a syphilitic iritis and neuro-retinitis of one eye, ran very much the same course. In this case the patient refused the second dose of "606" till all vision had been lost, and only consented when the pain of the irido-cyclitis became so intense that he could no longer bear it. The acute symptoms cleared up in less than a week, but vision, of course, was not recovered. Massive doses of potassium iodide by mouth, and mercury, both by mouth and by inunction, was given in this case, and it is to be presumed in the other cases as well.

Our experience with primary lesions and all lesions of the mucous membrane, secondary skin eruptions of all kinds, gummata superficial in location, has been that they rapidly clear up under salvarsan alone; however, all primary lesions, if possible, should be excised and gummata removed. Glandular involvement has

been extremely resistant to this treatment, and in a great many cases very little result was obtained. Glands should be removed so far as possible and hypertrophied tonsils excised. These are hard to reach by treatment and afford a nidus for reinfection.

Malaria existing at the time of the administration of salvarsan was unaffected by it, as shown by subsequent findings of parasites in the blood, and chills, without possibility of later infection.

Among unusual cases was one F. (PM), that contracted primary syphilis. Treponema found in lesion on penis; salvarsan given, and sore rapidly healed. Within two months he had contracted another primary sclerosis on his penis at another location. One patient had a double initial infection; one sore on the prepuce and another around the nail of the left index finger.

Two cases of marked cerebral lues were treated. Both cases died. In addition to the salvarsan, these cases were given heroic doses of potassium iodide and intensive mercurialization. On *post-mortem*, one case showed a large gumma at the base of the brain about the size of a small orange. Its presence, but, of course, not its exact location, had been previously diagnosed, because of choked discs, and evidences of increased intracranial pressure. There were, however, no focal symptoms. A Cushing decompression operation was performed for relief of intense headaches.

The methods used in the diagnosis of this series of cases have been as follows: Suspected primary lesions were thoroughly rubbed with sterile gauze and the serum and scrapings mixed with India ink; bacteria and Treponema do not stain and are outlined clearly. Giemsa stain has also been frequently used, but owing to difficulty in keeping fresh solutions and the long period of time needed for staining, it has been discarded.

Levaditi's method for sections or staining *en bloc* has been the one of choice. In doubtful cases of atypical secondaries or tertiaries, or cases of inguinal or cervical adenitis, with no venereal history obtainable from the patient, or the history of so-called chancroids, hair-cuts, blisters, etc., the Noguchi modification of the Wassermann reaction has been used. It has brought to our attention many things and in our minds, has confirmed the opinion held before the Wassermann reaction was universally

available, that there is no such disease as a so-called chancroid. Cases meriting that diagnosis are atypical syphilis.

This is not intended to mean that no other lesions are to be found in the genital tract other than gonorrhea or syphilis; it is well known that herpes can be there as well as on other mucous membranes. Wounds may occur there, but if such persist with or without treatment, no matter what their physical appearance, they are syphilitic in nature, and as large a percentage of positive Wassermann's will be discovered upon examination as in a given number of typical hard chancres. In many cases no history or evidence of primary lesion could be made out, after careful examination of the mouth, genital tract and rectum, but secondary or tertiary syphilis was present and positive Wassermann's found. Whether syphilis can be contracted without a noticeable primary lesion is a mooted question. In our opinion, it is possible for a limited number of Treponema to be taken directly into the circulation without local reaction, or an extremely slight reaction, which would not be noticed by the patient, or leave a scar.

The following conclusions have been reached: Salvarsan should be given in all cases of syphilis and by intravenous method. The dose taken here as the entire contents of the ampule should be repeated until all clinical signs have disappeared. If one dose does this, it is sufficient for the present. Our experience in the service makes us extremely skeptical of syphilis ever being really cured. Then mercury and potassium iodide should be instituted and continued until a negative Wassermann is obtained at intervals consecutively for a period of one year. If the case gets out of control under this treatment, or the patient proves intolerant to mercury, another dose should be given.

We have found that practically all cases are clinically cured after two administrations at intervals of ten days for a period ranging from three to six months, even without mercurial treatment, and some cases are undoubtedly cured clinically for upwards of two years, for cases have been under observation at different clinics for this period of time and have shown no symptoms. We have cases which have been constantly on this station for a period of ten months after treatment and in some instances no mercury or potassium iodide has been taken and they have as yet

shown no return; however, they still give a positive Wassermann reaction.

There are no contra-indications to a careful intravenous administration of this drug. We have had cases of all kinds: heart lesions, nephritis, extreme jaundice, malignant syphilis, syphilitic tumor of the brain, syphilitic iritis, episcleritis and optic-neuritis, syphilitic involvement of the labyrinth with dizziness and falling to the side. None of these cases after administration of this drug have ever shown any ill effects attributable to the treatment. Careful ophthalmoscopic examinations are made before every treatment and afterwards in the case of complaint by the patient, or if it happened that he had any diseased condition of the optic nerve, retina, or choroid.

No changes were ever found that could be traced to the drug itself. No deafness has ever followed treatment in any of our cases. From a clinical standpoint the results can be summed up as follows: one or two doses of salvarsan intravenously are equivalent to six months to a year active mercury and potassium iodide treatment.

While this is not as much as we originally hoped, still it is certainly worth using in every case. The probabilities are that the large majority of cases after salvarsan alone become clinically cured and will live many years and die from some intercurrent affection without any return of syphilitic manifestations.

U. S. Naval Hospital.

USE OF SALVARSAN AT THE ARMY HOSPITAL, FORTRESS MONROE, VA.*

By F. P. REYNOLDS, M. D., Fortress Monroe, Va.
Major Medical Corps, U. S. Army.

It is greatly to be deplored that the original happy promises for arsenobenzol in the treatment of syphilis have not been fulfilled, at least to the extent expected by the profession in general and the layman in particular.

Widespread information concerning arsenobenzol has been diffused through the medium of the press and the popular magazines, and the general public has come to believe in the complete efficacy of the drug. That reaction will occur is certain when it becomes known that further experimentation has raised a doubt as to the place in therapy of "606" in the treatment of syphilis.

It must be somewhat of a shock and disappointment to a syphilitic to learn that instead of experiencing a complete cure by one injection of "606" he is doomed, not only to several injections, but also, in all probability, to a long course of mercury and, perhaps, even potassium iodide to effect the desired result.

It would appear that a more sustained confidence in the drug might have obtained had not the public been schooled to a belief which apparently is somewhat in error.

It is not intended to detract in the least from the merits of arsenobenzol; on the contrary, it is believed to be of inestimable value. The results of numerous observers have demonstrated that "606" controls many syphilitic lesions in a most remarkable, and at times startling, manner, that it materially advances the treatment of the disease and that it doubtless effects a cure in certain early cases.

The use of arsenobenzol at Fort Monroe was begun during the early part of the present year, and has been used in all specific cases on sick report since that time, interrupted, however, for a period of about three months, when the majority of the troops of the garrison were on the Texas border.

Arsenobenzol has been given, ordinarily, two doses in each case.

The intramuscular method was used in the first cases treated, twenty-one injections having been given. The buttock was chosen as the site for the injection. Pain, considerable tenderness and pronounced induration at the site of injection followed in all cases. The alkaline solution of the drug in sterile water was used. In one case a tumor was developed which persisted for several weeks. In no case was there abscess formation. The average length of time spent in hospital was fifteen days.

The intravenous method has been used eighty times. Severe chills, prostration and associated elevated temperature was noted in a small percentage of the cases. Nausea or vomiting with diarrhea and moderate temperature were noted in quite a number, while not a few suffered very little, if any inconvenience. One case passed into a state bordering upon collapse during the course of administration and remained in this state for about five hours. Uneventful recovery followed.

No abscess formations have occurred. Two

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cases, however, showed considerable swelling and induration at the site of the needle puncture, caused doubtless by escape of the solution into the subcutaneous tissue.

Technique of administration.—A glass-stoppered wide mouthed mixing bottle of about 120 cc. capacity is used. The arsenobenzol is tapped into this bottle, falling on the surface of about 50 cc. sterile hot water. Rapid agitation is made and a clear solution is accomplished. (Glass balls are unnecessary.) Sodium hydrate solution—0.5 to 1.0 cc. of a 15 per cent. solution is then added, when a heavy flocculent precipitate is formed, which redissolves as more sodium hydrate solution is added. Hot sterile water is then added, and the solution filtered into the dispensing bottle and diluted up to 250 or 300 cc. at temperature about 110 F. Before adding the "606" solution, it is advisable to partially fill the dispensing bottle with sterile normal salt solution, a part of which is run off through the tubing attached. The tubing is then double-clamped until ready. This is done to expel air from the tube, but particularly that the first part of the injection shall be non-irritating should the needle not successfully penetrate the vein. A tourniquet of gauze bandage is twisted about the upper arm and the patient is told to tightly close his hand, when the veins at the bend of the elbow are usually found to stand out prominently, one of which is chosen, the area sterilized by tincture of iodine and the needle plunged directly into the vein. Previously the entire apparatus is sterilized, including the filter paper. The gravity method is used, and ten to fifteen minutes are consumed in giving the solution.

The cases treated have been, as a class, of young adult age, physically well-developed and otherwise healthy. The debilitated, the diseased of heart, kidneys and arteries have not been met with, because of the system in the service which permits of close supervision, and as a result the majority of the cases in this series came under observation during early secondary manifestation.

The tabulated report shows admittance as follows:

Primary manifestations.	Secondary.	Tertiary.	Latent.
8	38	6	5

Early Cases.—Of this group of eight, three cases showed also early secondaries, all of which healed rapidly, but were given a second dose

of arsenobenzol, no manifestations being present at the time of the second injection. Three cases showing relapse have been started upon mercurial injections. Case 24 received one injection intramuscularly eight months ago, followed by prompt healing of chancre; no further treatment has been given and no further manifestations have appeared. He is at present awaiting result of recent Wassermann. This case appears to be one in which "606" may have effected a cure.

Secondary Cases.—This group of thirty-eight has been interesting because of the rapidity with which the lesions have disappeared. Lesions of mucous membrane disappear most promptly, while those of the skin fade with surprising quickness, and Wassermann reaction may become negative.

Many of these cases, however, appear to relapse in from three to six months, following the initial treatment with "606", or in some cases even earlier relapse occurs, as illustrated by the following: Chancre, June, 1911, admitted to hospital July 18th with mucous patches and general macular eruption; Wassermann was positive July 27th, ; "606" was given on July 30th; lesions disappeared promptly; a second injection was given August 9th; no manifestation present. October 16th, patient began on mercurial injections and after having received four injections appeared November 28th with mucous patches in mouth and with a tonsillar ulcer the size of a ten cent piece; a third dose of "606" was given on December 2nd; on December 4th, or in two days following injection the tonsillar ulcer had entirely disappeared and patches had healed.

Because of the relapse of these cases, routine mercurial injections weekly are being given, following the second dose of arsenobenzol. This course of mercury will be continued for three months, when the Wassermann test will be made and treatment re-established should relapse or Wassermann plus indicate.

Of the tertiary lesions, two cases having ulcers of nose and one case of ulcers of rectum healed promptly following "606", but were lost track of on account of discharge from the service. One case having had mercury for an indefinite period showed ulceration of skin, nose and rectum. An intramuscular dose of "606" was administered, with prompt disappearance of lesions which remained in abeyance for six months when relapse occurred. "606"

was again given, but patient was discharged from the service and lost track of.

One case of cerebral syphilis and one of syphilis of the lung were not improved.

Of the latent cases, four have been discharged from the service and lost trace of. The remaining one showed a positive Wassermann in November and received an intravenous injection. No Wassermann has since been taken.

As to the Method to be Chosen.—The intravenous appears to offer the most advantages. If properly given it is painless. The constitutional symptoms are oftentimes practically nil, and the patient can return to his business in from one to three days—in fact, it frequently occurs that a part of a day is sufficient to recover from any disagreeable symptoms. It would seem, however, that any attempt to use this method in conjunction with office practice is ill-advised.

That there is a certain amount of danger in giving "606" is evidenced by the number of fatalities reported, and probably by a greater number not reported. It would appear, however, that more care in selecting the patient and improvement in technique would do away with many unfortunate results. The debilitated, those suffering from exanthemata, chronic alcoholism, and degenerative lesions wherever situated, but particularly those of heart, kidneys and arteries, are not desirable subjects for treatment by arsenobenzol.

In conclusion, it may be stated that there appears hope for a definite cure in primary syphilis with the use of "606", if the cases are taken sufficiently early; that all primary and nearly all secondary lesions respond most promptly and with some permanency. Late secondary and tertiary ulcerative processes and gummata respond very favorably, but it is believed that, with the exception of early primary cases, there will occur frequent relapse with the use of "606" by itself. That "606" advances the treatment is evident, and in conjunction with mercury and possibly potassium iodide will doubtless effect an early and permanent cure.

The Virginia Health Department has issued a *Hotel Directory* in pamphlet form, containing the list of hotels in Virginia which have been given certificates of inspection as conforming to the requirements of law. It may be had of the department upon request.

Proceedings of Societies, Etc.

NORFOLK COUNTY MEDICAL SOCIETY— SURGICAL SECTION.

Reported by FRANK H. HANCOCK, M. D.

The subject for discussion for the December, 1911 meeting, held at Norfolk, Va., was:

Use of Salvarsan in the Treatment of Syphilis.

Dr. Frank Hancock began the proceedings with a brief prefatory reference to the work of Ehrlich, saying that he had created an experimental therapy, studying biologically the curative processes in experimentally induced diseases, finding that certain specific chemo-receptors caused anchoring of the drug, and thus the parasitocidal effect. Ehrlich says the success of his work depended upon this conception of specific chemo-receptors, which he was able to obtain in these researches.

Means now being placed at his disposal by his German friends, and funds supplied by John D. Rockefeller—upon the advice of Flexner—he proceeded biologically and chemically to a consideration of diseases produced by trypanosomes and spirilla, subjects in which he had long been interested.

Pharmacology had heretofore taught only the toxicity of drugs, ignoring the principal point, namely: the means by which the remedy cured disease. Ehrlich believes that a medicinal substance can only act upon the bodily system by being *incorporated into it*; which is the correct idea, as he has succeeded in demonstrating after twenty-five years of arduous toil. Thus have come about numerous successes in the study of trypanosoma and spirilla diseases.

In human therapy the circumstance of the idiosyncrasy of man has to be considered which cannot be estimated at all in animal experiment; for which reason avacetin, arsenophenylglycin and atoxyl, which act similarly to "606," had to be abandoned because of amauroses and other untoward effects that occasionally followed their use. Since arsenic in some form had to be used in spirilla borne diseases, because of its avid attack upon those parasites, it became necessary to find some arsenical derivative that presented no particular danger of secondary toxic effects, and yet had the curative value of arsenic. This Ehrlich claims to have found in salvarsan, which seizes

the Spirochaetes only and is without affinity for the tissues of the host.

Here follow papers by Dr. George B. Tribble on "*Later Experiences with Salvarsan at the U. S. Naval Hospital, Norfolk, Va.,*" (see page 508), and by Dr. F. P. Reynolds, on the "*Use of Salvarsan at the Army Hospital, Fort Monroe, Va.,*" (see page 511).

Dr. Charles H. Saunders reported an interesting case of syphilitic periostitis with such excruciating bone pains that morphine had to be given often, and the patient constantly kept under bromides. This condition lasted for two years or more, notwithstanding the most heroic and persistent mercurial and potash treatment. Dr. Saunders tried scraping the tibial ulcer, hoping to assist the mercury in reaching this spirochaetal focus from which the pain emanated; this however, was without result, the nocturnal bone pains continuing. Finally, when both he and his patient were exhausted and had despaired of any relief, salvarsan which was then coming into general use, was administered intravenously, when lo! the pain, like a marsh lamp, vanished into night.

Thereafter this patient enjoyed perfect health, and was entirely free from pain, for several months; then the symptoms reappeared exactly as they had been before, the suffering being most intense at night. (Ehrlich mentions it as characteristic of this spirochaete that it is a nocturnal irritant when its locality is in the bone). A second dose of salvarsan afforded complete relief, since which time he has not heard of any relapse—a year or more ago.

This case is of interest in connection with Wechselman's statement in reviewing his 1400 cases of salvarsan administration; he says, "It seems to be a constant rule that the paramount effect of the remedy is shown in *periostitis*, and in cases of *severe bone pains which often drive patients to despair.*"

It developed during the discussion that Dr. Herbert Old recently asked the students before the State Examining Board to describe the difference between hereditary syphilis and pemphigus neonatorum. As shown by Wechselman in his remarkable study of syphilis in the 1400 reported cases of "606" administration, pemphigus is often found growing luxuriantly on the hereditarily syphilitic child. Whereupon Dr. Hancock twitted Dr. Old for confusing young minds with impossible ques-

tions, since it was apparent that these diseases merged into each other, that one was the bed-rock upon which the other grew, and thus were not to be differentiated, except through Dr. Old's prolix nomenclature. Confusion in the students' minds resulted less from misapprehension, than from the error of the question as indeed, a talisman would have been required to correctly interpret whatever it was Dr. Old had in his mind, when he asked that question.

Dr. Herbert Old denied that these diseases "merged into each other," coalesced, presented an ensemble, or that he had confused the students' minds with unscientific or inaccurate questions.

These two diseases are distinct in every way, as is well known to those who are familiar with the literature of the subject or have had bedside experience. Besides, the cases referred to as having grown upon a syphilitic basis were pemphigus syphiliticus, instead of the pus cocci infection known as pemphigus neonatorum. The diagnosis is between syphilitic and non-syphilitic pemphigus. At the clinic of the P. & S., New York, Dr. Holt exhibited an infant of low nutrition, wasted body, sallow wrinkled skin, drawn and old expression, with bullae containing serum, scattered over the surfaces of the body, and asked for a diagnosis; "hereditary syphilis" was the decision. Dr. Holt then showed by palpation and percussion that the liver and spleen of this infant were of normal size, at least were not palpably enlarged, which is never the case in hereditary syphilis. These are the organic changes that distinguish the syphilitic from the non-syphilitic infant.

This is the real discrimination, and it was for the purpose of developing this fact that the question was asked on the State Board. The universal idea appeared to be, judging from the answers, that *Hutchinson's teeth* might be depended upon to solve the problem, but as it does not appear that *teeth* occur prenatally, or in the early months of infancy, the answers could scarcely be accepted as conclusive. I am sorry Jonathan Hutchinson did not arrange an earlier setting for his pathognomonic sign. I now commend to Dr. Hancock the literature upon this important subject for his further edification.

Dr. Feild asked why arsenobenzol was not given directly to the syphilitic child. Dr. Old replied that toxicity might occur from rapid dissolution of enormous quantities of spiro-

chaetes; with adults, spirochaetes are not present proportionately in such overwhelming numbers—liberating endotoxins; that by giving "606" to the mother, only the protective substances, the antibodies, go over in the milk, thus neutralizing the spirochaetic poison, and causing a disappearance of syphilitic phenomena. After such improvement, Wechselsman has given "606" directly to the child to destroy remaining spirochaetes. Thus, "606" destroys spirochaetes with its arsenic rest, releasing endotoxins, which in turn, directly stimulate the body cells to the production of antibodies.

It was remarked later in the meeting that it would probably always be necessary to give two or more doses of salvarsan or any other parasitocidal remedy in syphilis for this reason,—that there are encapsulated foci of spirochaetes disseminated throughout the body, which may not be sufficiently vascularized to be reached by the drug at the time of administration. Such situation comes about in this way: The course of syphilis differs from other protozoic diseases, particularly the trypanosomatomal diseases in animals; in the latter, the parasites are reproduced in infinite numbers in the blood, bringing about the death of the host, a condition that could never arise in syphilis, because the spirochaete pallida is not a blood parasite. It traverses the blood stream but once, in large numbers, then settles in the tissues in disseminated nests, resting there until vascularization takes place, multiplying for further distribution, if not attacked by dioxydiamino-arsenobenzol, the discovery of which was one of the magnificent victories of civilization.

Section adjourned.

Analyses, Selections, Etc.

Ozone and Fertility.

R. L. Hammond, Woodsboro, Md., says that ozone was formerly held in high esteem, and is, no doubt, a potent agent, exerting a triune meteorological effect in the prevention, causation and cure of many diseases, particularly the epidemic and miasmatic varieties. Its history reveals many interesting opinions regarding its value in the animal economy. In "The Year Book of Treatment," 1892, p. 347, Lea Brothers & Co., I find the following which will show

the value placed upon it by some apparently competent observers: "Dr. Samuel S. Wallian. (*New York Medical Journal*, 1891, vol ii., p 101), makes some statements which, if correct, are important. He says that at Trincomalee, in Ceylon, from May to September, the southwest monsoon blows over the island, and in passing through the jungles gets robbed of its ozone. From October to April the northeast monsoon blows over the Bay of Bengal, and arrives at the village laden with ozone. From May to September the ozone was 2.5, and the number of conceptions 57; from October to April the ozone was 8, the number of conceptions 100. The Malagash negroes breathe a scantily ozonized air, and are noted for their want of fecundity; while on the east coast of Central America, and on the north side of Cuba and Jamaica, where the atmosphere is nearly always highly ozonized, large families and multiple births are quite the rule. He thinks there is no doubt that the free use of active oxygen has a marked influence over the procreative function. Patients who have regularly inhaled the artificially prepared gas for some weeks or months, for various ailments, have almost invariably found themselves gradually recovering lost sexual tone to a decided degree. Numerous observers have corroborated each other on this point, and in nearly every instance the results noted have been wholly unanticipated. Cases of sterility have, under its use, recovered, and impotence of long standing has given place to a fair degree of virility. A physician of Dr. Wallian's acquaintance, who has made extensive use of active oxygen in his practice, declares that he has but one objection to its use, which is, that it invariably arouses the sexual appetites of those patients who persist in its use for any considerable time."—(*Physiologic Therapeutics*, Nov.-Dec., 1911.)

X-Ray In Gynecologic Therapy.

E. H. Skinner reviews the recent rather extensive literature on the X-ray in gynecologic therapy, especially in the treatment of uterine myoma. The treatment in such cases is based upon the fact that the X-ray can produce ovarian atrophy and the artificial menopause incident thereto. Albers-Schönberg states that we may expect certain definite changes, as follows:—(1) Cessation of menstruation, producing a reduction in the myoma mass and the disappearance of the menstrual or intermen-

strual bleeding accompanying myomas, together with relief from pain; (2) the relief of post-climacteric bleeding; (3) the lessening or cure of conditions in the post-climacteric period depending upon myomas without bleeding. It seems that the menstrual flow following the first exposure may be quite profuse, and this treatment is therefore not advisable in very anemic women with less than 40 per cent. hemoglobin. A very important matter is the proper technique and dosage of the ray to be employed, and Skinner reviews in detail the methods employed by Pfahler, Albers-Schönberg and Bordier to guide them in the proper therapy.—(*Interstate Med. Journal*, November, 1911.)

An Explanation of the Decrease of Tuberculosis.

Lawrence Irwell contends that the decrease of tuberculosis, both before and since Koch's discovery of the bacillus, is due to natural selection among civilized communities. It has been proven that practically all cadavera show that the bacilli have affected some portion of the body, death occurring often many years later from entirely different causes. Not less than one-seventh of all deaths in the civilized world are due to tuberculosis; but if elimination by this disorder has ceased to be selective, all deaths must necessarily be caused by it, for practically everybody is attacked by it at some period of existence.

The comparative infrequency of acute tuberculosis cannot be due to cure of this malignant form because physicians do not profess to have cured it, or to be able to do so. It cannot be the result of prophylaxis in the form of fresh air and a special diet before symptoms of the disease have made their appearance, because very few sufferers have been financially able to obtain such prophylactic treatment, and still fewer have been willing to leave their homes to escape infection when no actual disease was present. It cannot have been caused by residence in high altitudes, where tubercle bacilli are far from numerous, for a very small number of persons who suffered from acute phthisis ever reached such places, and most of those who did, ended their days there. The rarity of acute phthisis is the direct result of natural selection—the slow, but gradual elimination by tuberculosis of the lungs of those individuals who were born with the tubercular tendency in its extreme form before they were

old enough to beget children inheriting their congenital susceptibility toward tuberculosis.

Tuberculosis differs widely from such a disease as small-pox since no normal individual is ever attacked by the former. Men vary greatly in their susceptibility to infection, and in their powers of subsequent resistance. If, then, a lethal disease is very prevalent, it is certain that it presents a very stringent form of natural selection. In this country hardly any one escapes some mild or serious form of tuberculosis—or measles or whooping-cough—unless he possesses inborn immunity. If he escape death from them, he possesses resisting powers toward the microbes which produce them. Whenever any form of selection is stringent, it is accompanied by an evolution of those qualities which enable the survivors to live. It follows in the case of disease that selection will cause an evolution of inborn power of resisting infection, or an inborn power of recovering from infection. Only the former is of much use against tuberculosis, for it is well recognized that recovery from tuberculosis does not confer immunity, or even increased resisting power. As tuberculosis weeds out those who cannot resist infection, it is evident that, if natural selection acts at all, it will cause an evolution of inborn immunity. The disease always tends to weaken the individual affected by it; it is not known to confer any kind of benefit. But all nations and races who have been exposed to it are resistant to it precisely in proportion to their past experience of it.

To any one who has studied biology, our present methods of dealing with tuberculosis seem utterly inadequate, first, because in the majority of cases when the congenital predisposition is present, it is impossible to avoid infection; second, because persons of the phthisical type generally marry early in life and beget children more rapidly than older people.

Tuberculosis will automatically decrease when men and women who have inherited long, narrow, flat chests, delicate lungs and feeble resisting power to the tubercle bacillus, and perhaps to other micro-organisms—the tubercular diathesis—refrain from reproducing species. Compared with this remedy for tuberculosis, all other measures are likely to prove failures.—(*Medical Review of Reviews*, December, 1911.)

The Electrical Treatment of Arterial Hypertension.

John H. Burch, Syracuse, N. Y., states that there are three important factors in the study of arterial hypertension: ventricular systole, peripheral resistance, and elastic recoil of the arteries. Increased resistance may be due to circulating toxins, various reflexes, and psychic disturbances rather than to organic failure. It is important to determine the state of compensation before attempting to reduce blood-pressure. Vasomotor insufficiency due to intestinal autointoxication from splanchnic vasomotor ataxia may be relieved by supporting the abdominal contents. If any nitrate is inhaled and there is no change in the tension one may conclude that there is an impairment of arterial recoil, the result of arteriosclerosis and fibrosis. When blood pressure is reduced by a mild discharge from the terminals of a Tesla coil the increased resistance is due to vasomotor factors. If weaker currents have but an insignificant effect on arterial tension there is broken cardiac compensation; these cases should not be subjected to high voltage or amperage for fear of collapse. The vasomotor cases are much benefited by this treatment, which also increases metabolism, the excretion of ura and urates, and the amount of urine, and lowers blood pressure. Two illustrative cases are given. Most of the author's cases have been active business men of excellent habits, in whom arterial hypertension was the result of mental anxiety and "the strenuous life."—(*Medical Record*, October 28, 1911.)

The Albumin Reaction of the Sputum in Pulmonary Tuberculosis.

Maurice Fishberg and David Felberbaum, New York, examined the sputum of cases of pulmonary tuberculosis with reference to the presence of albumin, and consider that this has some diagnostic value. A positive reaction of albumin is strongly suggestive of tuberculosis. When there are no symptoms of emphysema and cardiac dilatation, it is strong presumptive evidence of tuberculosis. In the advanced stages of the disease the absence of albumin does not always indicate a cure, since a negative albumin test and positive tubercle bacilli have been observed by the authors. In active progressive cases the amount of albumin is greater than in quiescent or healing cases, and in fibroid cases the amount is very small.

The source of the albumin is the ulceration of the bronchi and pulmonary parenchyma. Albumin is present in the majority of cases of pulmonary tuberculosis. Forty-two specimens of sputum were examined, with positive results, tubercle bacilli and albumin being present. The test is simple and can be easily performed by the general practitioner. It is made by adding acetic acid to the sputum to dissolve the mucus, and then boiling the mixture while adding sodium chloride. A curdy white precipitate indicates the presence of albumin.—(*Idem*).

Why Is the Apex the Point of Election In Tuberculosis of the Lungs?

Thomas G. McConkey, San Francisco, Cal., states that the tubercle bacillus reaches the lungs by way of the lymphatics, and eventually gets a lodgment in the pleura, after which it enters the air vesicles. The first stage of tuberculosis is a lymph-node infection. When the lymphatic fluid which covers the surface of the pleura is present in sufficient amounts the bacilli are consumed by the phagocytes; but at the apex the lymph is scanty and is carried down by gravity, leaving the bacilli free to penetrate the lung substance. These facts partly explain the dry pleurisy with a hacking cough in the early stages of pulmonary tuberculosis.—(*Idem*).

Correspondence.

WHERE ARE THESE DOCTORS?

Farmville, Va., Jan. 12, 1912.

To the Editor;—In response to your invitation to publish anything of interest to the profession or to aid the officials of the Medical Society of Virginia, I write to ask if you will kindly print the attached list of members of the Medical Society of Virginia, to each of whom a copy of the transactions was sent, but on account of change of address never received, as was evidenced by the usual card of notification from the postmaster saying, "*party moved away*," or "*unable to deliver, as address unknown*," etc.

The object of this communication is to locate these members if possible, either through the parties themselves or some friend who may know their present address.

A certain percentage of our membership

move and change their address each year, but few of them ever notify the officials of the Society; hence, they fail to get literature sent out by the Society. It is an important matter, as you can appreciate, to keep a roster of the membership with their addresses, but unless notified in case of a removal on the part of a member, it is impossible to keep track of many of them.

If any member of the profession or Society knows of the address of any of the physicians in this list and will send it to me, it will be much appreciated, and will enable us to send the next volume of the transactions to the entire membership of our Society.

NAME.

FORMER ADDRESS.

Dr. V. V. Anderson.....	Lynchburg, Va.
Dr. Alfred S. Black.....	Muskogee, Okla.
Dr. Charles A. Clemmer...	Middlebrook, Va.
Dr. Thomas J. Colley.....	Clintwood, Va.
Dr. Randolph Collins.....	Woodlawn, Va.
Dr. S. D. Craig....	Natl. Soldiers' Home, Va.
Dr. W. L. Gatewood.....	Petersburg, Va.
Dr. E. H. Henderson.....	Newbern, Va.
Dr. C. H. Hogan.....	Roanoke, Va.
Dr. Thomas F. Jarratt.....	Petersburg, Va.
Dr. George Kerr.....	Hampton, Va.
Dr. Herbert W. Lewis.....	Manchester, Va.
Dr. Magnus B. Monsen.....	Stuart, Va.
Dr. John W. Somerville.....	Norfolk, Va.
Dr. Wm. D. Tewksbury...	Washington, D. C.
Dr. Robert F. Williams.....	El Paso, Texas.

PAULUS A. IRVING, M. D., *Secretary*
Medical Society of Virginia.

Book Notices.

State Registration for Nurses. By LOUSE CROFT BOYD, R. N. 12 mo. 42 pages. Paper. Philadelphia and London: W. B. Saunders Company. 1911. Price, 50c. net.

This pamphlet contains a *summary* of laws in the various States of the Union governing the registration of nurses, compiled in tabular form for ease of comparison, etc. It also has a Bibliography of several pages of original articles, editorials and foreign news. The material furnished will prove useful for quick reference to those interested in the subject.

State Board Questions and Answers. By R. MAX GOEPP, M. D., Professor of Clinical Medicine, Philadelphia Polyclinic. Second Edition Revised. 8vo. 715 pages. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$4 net; Half Morocco, \$5.50 net.

This book is intended primarily for the student or graduate in medicine as a guide in the preparation for State Board and college examinations. Questions have been selected from examinations asked in the larger and more representative States for several years past, and have been arranged with condensed answers, according to subject, in such order as to lead serially from the consideration of one disease to another. A few questions have been interpolated here and there so as to maintain the continuity of the subject, and recent advances in the various branches of medical science are likewise treated, so as to make the present edition modern in every respect. The volume contains a great amount of general and useful information, and no doubt will serve a good purpose as a hasty reference for the physician who, as he starts to leave his office, suddenly recalls that it might be well for him to glance over the cardinal symptoms of a given case, or to refresh his memory as to the general line of treatment before going. The book contains an excellent index of forty-five pages.

Editorial.

To Check Mental Degeneracy.

Those who have followed the trend of things progressive must have observed that in recent years many movements have been inaugurated in this State which had as their objects the betterment of the condition of the defective and delinquent classes, but more recently efforts have been crystallizing, especially in the direction of prevention of mental degeneracy. There are now in the hospitals for the insane four thousand and six hundred insane persons, and investigations made last year showed that, scattered throughout the State, there are more than that number of idiots and feeble-minded persons. An analysis of the statistics proves that insanity, epilepsy and feeble-mindedness are increasing, and that the chief causes of these degenerate conditions are heredity, venereal diseases, alcohol, etc. Year after year the State is put to ever-increasing expense to pro-

vide and care for the insane, and a year or so ago an institution was established for epileptics. The present Legislature is being called upon to increase the accommodations for the insane and epileptics. Last year more than half a million dollars was expended for the care of these unfortunate wards of the State, and every dollar was doubtless expended economically and judiciously. Nothing has been done by the State for the feeble-minded, and their number is constantly growing.

A thorough analysis of the situation leads to but one conclusion—that is: prevention. How best to accomplish this is a problem, the solution of which demands the study of our most profound thinkers. It is generally accepted that a large majority of cases of mental disease, epilepsy, idiocy and feeble-mindedness owe their origin to heredity. This being true, efforts should be directed in checking the procreation of all such defectives. With this view in mind, several bills have already been formulated and introduced in the present Legislature. Among these bills is one providing for the establishment of a colony for feeble-minded women during the child-bearing period. Another is to authorize sterilization of idiots and confirmed criminals confined in public institutions. If epileptics and persons suffering from incurable forms of insanity were included, the good results would be correspondingly greater. One of the most effective and practical measures now pending before the General Assembly is that prohibiting the marriage of mental defectives, habitual drunkards, drug habitues, epileptics, persons suffering from venereal diseases, etc. All these measures have the endorsement and support of progressive and advanced thinkers, and deserve the approval of the medical profession generally. To sum up: if we would reduce materially the number of mental degenerates and improve the physical and mental standard of the race, we must prevent propagation, by means of sterilization, under proper safeguards; segregation, under State supervision, and a stricter regulation of marriage.

The paper presented in this issue by Dr. William F. Drewry on "*The Mental Defectives*" deals with facts and figures concerning this much-to-be-pitied and afflicted class, and the recommendations he makes for their care, control and treatment by the State should merit a most hearty support.

Tri-State Medical Association of the Carolinas and Virginia.

Dr. Joseph T. Buxton, Newport News, Va., chairman of the Section on Surgery, would be glad to receive as promptly as possible titles of surgical papers to be presented at the meeting of the Association, February 21-22, in Columbia, S. C.

All of the officers are working to have a large attendance, and good program of papers, so that this may prove the banner meeting of the Association. Dr. J. Howell Way, Waynesville, N. C., and Dr. Rolfe E. Hughes, Laurens, S. C., are president and secretary, respectively.

Dr. Shattuck Retires from Editorial Work.

Early this month, Dr. George B. Shattuck retired from the editorial management of the *Boston Medical and Surgical Journal*, one of the oldest and most representative medical journals of this country. Since assuming the editorship, more than thirty-one years ago, Dr. Shattuck has always conducted the journal with dignity, and has kept it thoroughly abreast of the times. While he will be greatly missed in his accustomed place, the new management will be fortunate in being able to receive his advice and the benefit of his judgment in time of need.

Medical Society of Virginia.

Under the head of *Correspondence*, in the present issue, we publish a letter from Dr. Paulus A. Irving, Secretary of the Society, asking for assistance from readers of this journal in helping him locate some members who, he was informed by postmasters at the offices named, did not receive the last copy of *Transactions* of the Medical Society of Virginia. It is barely possible that some of these members have sent notices of their removal and that such announcements were lost in transit. However, will not some one help Dr. Irving to locate the members named? It would also be well for those who have recently changed their addresses to write him promptly, if they have not already done so, in order that the post-office address of each member may appear correctly in the forthcoming issue of the *Transactions*.

The Newport News (Va.) Medical Society.

Papers by prominent invited guests have added much to the interest of recent meetings

of the Newport News Medical Society. Dr. A. J. Ochsner, of Chicago, read a paper on "Exophthalmic Goitre" in December, and Dr. Stuart McGuire, of Richmond, on "Surgery of the Biliary Tract," in January. Dr. Joseph T. Buxton is president of the Society.

Surgeon-General Blue, U. S. P. H. & M. H. S.

The promotion by President Taft of Surgeon Blue to the position as Surgeon-General of the United States Public Health and Marine Hospital Service has been confirmed by the Senate, effective January 13, 1912. Dr. Blue has risen rapidly in the service, and has proved himself an excellent executive officer. He has always been especially interested in preventive medicine and quarantine work, and is well fitted for his work as surgeon-general.

The United States Civil Service Commission

Announces an examination, February 20, to secure eligibles from whom to select a male anatomist, at \$1,600 per annum, for the Army Medical Museum, and vacancies requiring similar qualifications as they may occur. Among the requirements, the applicant must be a graduate in medicine, between twenty and thirty-five years of age, and shall be examined in the State or Territory in which he has resided for at least one year prior to date of examination. Applicants should apply at once to the above Commission at Washington, D. C., for application and examination Form 1312.

Piedmont (Va.) Medical Society.

Before the Society was called to order by the President, Dr. George W. Starke, in the amphitheater of the University Hospital, Charlottesville, the visitors inspected the hospital and laboratories, etc., of the medical school. Interesting papers were read by Drs. J. C. Flippin, Stephen H. Watts and J. Staige Davis, of the University, and J. J. Lloyd, of Catawba Sanatorium. A luncheon, tendered the visitors at the hospital, added much to the social enjoyment of the meeting.

A Conference on Medical Education, Legislation and Public Health

Will be held at the Congress Hotel, Chicago, February 26 and 27, under the auspices of the Council on Health and Public Instruction of the American Medical Association. Beginning at 10 A. M. on the twenty-sixth, the Council on Medical Education will hold its eighth an-

nual conference, and on Tuesday, there will be conferences on Medical Legislation and Public Health. The session will be continued on Wednesday, if necessary. A public meeting will be held on Tuesday evening, at which time Senators Owen, of Oklahoma, and La Follette, of Wisconsin, will deliver addresses on Public Health.

Doctors Entertain Lawyers.

In the early part of this month, the Richmond Academy of Medicine and Surgery entertained the Richmond Bar Association and other invited guests at a handsome reception at the Westmoreland Club. Toasts were responded to by leading members of the ministerial, legal and medical professions, and in the speeches much stress was laid on the necessity for co-operation of the learned professions. A motion was finally adopted looking to the organization of a professional club, whose membership should be composed of lawyers, physicians, ministers and teachers. A committee will be appointed to take up the matter and try to organize such an association.

The Epidemic of Cerebrospinal Meningitis,

Recently reported from Northern Texas, now seems to be somewhat under control. *Public Health Reports*, according to reports from the State Health Officer of Texas, through Surgeon Guiteras, at Galveston, states that a total of approximately 300 known cases, with a mortality of 50 per cent., was recorded to January 9, 1912.

Obituary Record.

Dr. James McKee,

One of the most prominent physicians in North Carolina, died at his home in Raleigh, January 10, aged sixty-seven years. After the War between the States, in which he served the Confederacy, he studied medicine, graduating from Bellevue Hospital Medical College, New York, in 1869. Always an active member of the medical profession, he had served for a number of years as secretary of his State Medical Society, and had, for the past twelve years, been superintendent of the State Hospital in Raleigh. He was also prominently identified with medical education in his State.

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WASTE.*

By CYRUS THOMPSON, M. D., Jacksonville, N. C.

If the art of living is the finest of all the fine arts—and who that dreams of a perfect life shall doubt it?—then the saddest thing in life is man's slowness in learning to live it. The world is so beautiful, so beneficent, so abundant. The order of nature is so frugal and so conservative. In the stars of the firmament, there is no lost motion; no planet swerves from its helpful path; there is no dissipation of energy but is conserved in some useful form. If human economy is negligent, destructive, and wasteful, the divine order is constructive and saving. Out of the void and darkness, the spirit of God created all that is, preserves it all, and destroys nothing. Out of the abundance of man's heritage, over which he holds rightful dominion, behold the waste of life, the waste of opportunity, the stupendous waste of material!

Just one old Book contains the wisdom of the ages—written by the best of their times about the best when at their best, as a scheme of life the world's literature has nothing comparable to it. It makes record of the one perfect life, the one universal man, the measure of all men. In Palestine one afternoon, this Galilean had been teaching a vast multitude. "When the day began to wear away, then came the twelve and said unto him, Send the multitude away, that they may go into the towns and country round about, and lodge and get victuals; for we are in a desert place. But he said unto them, Give ye them to eat. And they said, We have no more but five loaves and two fishes, except we should go and buy meat for all this people. For they were about five

thousand men. And he said to his disciples, Make them sit down. Then he took the five loaves and two fishes, and looking up to heaven he blessed and brake and gave to the disciples to set before the multitude. And they did eat and were all filled." "When they were filled"—with food and no less with wonder—when the multitude and the disciples of the Master were satisfied and ready to go away, then came to his disciples this command out of the carefulness of God, "Gather up the fragments that remain, that nothing be lost." A desert place, to be sure—a multitude to be fed, only five loaves and two fishes; but the Lord of Life the master of the feast, the divine economy of saving, and the fragments more than they had at the beginning!

With the savage man, all is waste; as civilization advances, something is saved, though much is lost.

In a material way, we are saving much. The cotton of the South not long ago was valuable only for the lint, but now a very considerable part of the value of the crop is contained in the seed. Thirty years ago, a seedless lint seemed desirable; to-day the cotton-grower would almost welcome a lintless seed. Olives do not grow in the cotton-belt, nor cows and hogs on cotton stalks; but from cotton seed we get lard made in Chicago, butter churned in Indiana, and olive oil pressed in sunny Italy. Petroleum gives us everything from axle-grease for an ox-cart to gasoline for an aeroplane; and the profits of the Standard Oil Company are largely made from the waste of twenty-five years ago. Armour has learned the saving principle of the whole hog or none; and he puts on the market everything from the ham to the internal secretion of the suprarenal gland. It used to be a problem with our saw-mills what to do with the saw-dust. Invention found a way to throw it into the furnace for fuel, and later invention converts it into grain alcohol. On farm and in factory, improved implements,

*Annual oration delivered before the Seaboard Medical Association of Virginia and North Carolina, at Newport News, Va., December 5, 1911.

methods, and machinery make impossible and ridiculous the slow and wasteful methods of other days. Vast areas of waste lands we are reclaiming by drainage, and by irrigation we are forcing the desert places to blossom like the rose. The stage-coach is a memory, and railroads are everywhere; and the wastefulness of bad country roads is preached at every turn by the makers of automobiles and gasoline. The waste power of turbulent waters is converted into productive energy. Steam and electricity, the telegraph and telephone, are crowding the world together and wiping out time and distance; and still, finding it too far withal to steam around Cape Horn, we are spending our millions to save time, and cut across at Panama.

And in a social way, we are becoming conscious of our wastefulness, and are turning our minds to the principles that underlie conservation. I believe that I am right when I say that all social waste is due to the assertion of individual rights, and all social conservation is founded upon a denial of them. And I believe that the best government for any man is that which is best suited to develop the best possibilities that are in him. The form of government, in other words, must be determined by the matter of development.

All government is a denial of natural rights and the substitution of duties for the good of the individual in the common good. The fullest exercise of natural rights is found in a state of savagery; the highest conservation of rights is found in a state of civilization—in that civilization which makes fullest denial of natural rights for the well-being of society.

The State exists for the individual, and the individual must exist and be fitted to exist for the State. No personal right can stand in the way of the individual and social good. The doctrine of rights must yield to the doctrine of duty; in the higher civilization, the sense of selfishness must give place to the sense of service.

The law of eminent domain holds true not only in lands and material things: it is operative as well over men. The State may tax for the preservation of order and compel for the public service. It may fine and imprison for crime; for the safety of society, it may take away all rights for a time or a lifetime; nay, it may take even life itself when the individual

so misuses his rights that his death, better than his life, subserves the public good.

Preventive medicine, than which there is no finer fruit of civilization, is founded upon a denial of rights. Compulsory vaccination is primarily for the safety of the individual, but mainly for public protection. Quarantine against acute contagious and communicable diseases is prevention of waste through denial of personal rights. We may not allow a man to exercise a right when he exercises it to his own hurt and to the injury of his neighbors. The right is taken from him for his own and the public good, so to conserve best his best rights in the health of his community.

These principles we are steadily educating men to appreciate, and when we come to the full appreciation of the divine economy of service and saving, pestilence will not walk in darkness, nor destruction waste at noon-day.

A dairyman's cows are his own, to be sure; but he may not sell infected milk to waste the health and life of his neighbors' children.

A butcher's meat is his own; but, if unfit for human food, he may not offer it in the market places.

A patent nostrum is its maker's own, but let him warn the purchaser of its narcotic content.

A manufacturer's money is his own, but he may not spend it for the cheaper labor of the undeveloped child, or require of a man for a day's labor toil beyond a definite number of hours.

A man's child is his own, but he may not waste its growth and health and life in hazardous labors.

A man may not waste his own child nor his neighbor's child, nor claim any right of person or property that hinders the aggregate development and safety of his community.

On every hand out of the mouths of frauds, ignorance, and politicians, we hear enough of the rights of men; let us hear more rather of their duties. We have had enough of waste; it is time we had more of conservation. To love our neighbor as ourself is but to see ourself in our neighbor and to find our safety everlastingly involved in his welfare. From rights, then, to duties; so leads the way from waste to permanent wealth and happiness.

Think for a moment of the stupendous waste in an uneducated and untrained child, the countless untrained, undeveloped, uneducated children of the past. You desire wealth, but

intrinsic value resides only in man; the value of things is derived from man; and the greater or less value of things is dependent upon the character, the quality of man. A lively consciousness of this fact is the motive of all progress in education.

Our system of public education is founded upon a denial of rights and a material consciousness of duties—a denial of the right of the child to himself, of the right of the parent to his child, of the right of even the childless man to so much of his money as may be necessary for the child's education. To conserve, to construct, this is the mark and work of civilization; to tear down, to hinder, let that be of the past; it is diabolical. To build, to prevent waste, this embodies the whole duty of civilized man. The State is endeavoring to build for the sake of the individual and itself, and the individual must not be permitted to hinder or destroy, not even for himself. The State is fulfilling its duty to the individual, and the individual must be fitted to fulfil his duty to the State.

To prevent waste, therefore, we have everywhere our common schools, our graded schools, our colleges and universities; our technical schools for the education of men and our normals for the training of women. For the same reason we shall come everywhere to a system of compulsory education. Recognizing already the defects and consequent waste of our methods, we are coming even now to the study of exceptional and nervous children and to the medical inspection of school children in general.

To prevent waste, the State, the churches, and fraternal orders establish and maintain orphanages. These are not mere charities, not matters of sentiment only; they are makers of men and women—they make them, alas, far better than the average home!

To prevent waste, we teach the deaf and dumb and the blind, and make them self-sustaining members of society.

To prevent waste, we care for the insane and the epileptic, and restore many of these unfortunates to happy and useful life.

To prevent waste, gathering up hitherto neglected fragments, the State of North Carolina leads among Southern States in the establishment of a school for the teaching of the feeble-minded. The motive originated in this society, and stands as one of its glories forever. The Commonwealth of Virginia is urged to

follow in this constructive work; and Virginia cannot lag behind.

To prevent waste, everywhere there is better care of the criminal classes. The old misanthropy did not seek to reform and save; the old misanthropy imprisoned in noisome jails without hope of health or reformation; at the offender's cost and wretchedness. No prouder name stands in English history than the name of John Howard, the humane country gentleman, high sheriff of Bedfordshire, the father of modern prison reform. Begun in sentiments of humanity, the new philanthropy leads the State to take account of the offender and forces the offender to take account of the State. We punish the criminal not for the sole purpose of punishing, but for the protection and progress of society, to deter others from the commission of crime and to reform or improve the offender and send him home a useful member of society. If we deprive him of liberty and his rights, it is to make of him a better citizen. We work him and care for him; we feed him, clothe and shelter him; we make him profitable to himself and useful to the State even against his will.

To prevent waste, we have Juvenile Courts that consider the defects and possibilities of the criminal; and we build reformatories for young criminals, lest the hope of reformation to useful life be lost by association with the irretrievably bad.

To prevent waste, the physician has ceased to be the mere giver of drugs to them that are sick; he is become the peripatetic teacher of sanitation and hygiene, the guardian of individual and public, the apostle of the gospel of health. Having fought against death at close quarters and failed, he warns all men everywhere to fortify against his approach. And so he adds to the years of human life. If he carries no more or us beyond the limit of three score years and ten, he leads more lives more nearly to this limit. Oh! the waste of life in its prime, the slaughter of the innocents from mothers' arms, the untimely tears of broken hearts, before the physician glimpsed the fullness of his mission and began to rouse the State to the duty of preventive medicine! You've seen the tumorous scars, in every city, hamlet, and churchyard, that made prematurely leprous the beautiful face of mother earth.

Not that our work is yet fully comprehended or perfected; but this one thing we do, for-

getting the things that are behind, we press forward, proud that on stepping stones of our dead selves we are rising with better conscience to higher things.

To prevent waste, the manufacturer begins to look after the sanitation of premises and the health of his operatives. He finds that he can save life and time and money.

To prevent waste, great insurance corporations are organizing health departments, issuing health bulletins, and teaching their policyholders and the public how to live.

And to prevent the waste of war, this relic of barbarism, this verity of hell—the dream of poet and seer through centuries from Isaiah to the latest soul that sang in sight of things—to beat our swords into plough-shares and our spears into pruning-hooks—the greater nations of the earth now seek to adjust their disputes by arbitration. May our young nation lead the world in this joyous laugh in the face of Death! Oh, it will come some time, and nations will learn war no more! Did you ask when? I know not the day; but when man is wise enough to exercise his duty to his fellow as he would now assert his rights in his face, we shall not be far from the

“One far-off divine event,

Toward which the whole creation moves.”

For the world, despite all its evil and waste, is growing better; but from wild-grapes to grapes is a long way, a slow and halting evolution.

But there is more of high ideal and noble purpose in the world than ever before; knowledge is being diffused as never before, and we are growing more humane. But if we are on the Appian way, in sight of the Three Taverns, let us thank God, take courage, and go on: we are not yet in Rome.

For with all our diffusion of knowledge and increase of humane sentiment, with all that we write on our ledger as profit, is there not somewhat that we must set down as loss? “Reaching out for more things that are good, are we holding fast to the best things that we had?” The fear of hell may be the hangman’s whip to hold the wretch in order, but the fear of hell, the fear of punishment, is a necessary adjunct of government. The soul that sinneth, it shall die: let that law stand! For the wretch, the wrong, the wrung in moral fibre, punishment must be swift and sure. But on every hand, crime goes unpunished and murder is un-

avenged; mobs lynch and set the law at naught. In one turbulent Commonwealth, even the Governor, the Chief Executive and embodiment of law, condoned a lynching and expressed his willingness to have resigned his office and led the mob in his own State.

We are losing the fear of punishment both here and hereafter. In some serious sense, society is letting the sentiment of humanity run prematurely to seed. Our sympathy with the criminal living makes us forgetful of the murdered dead; juries listen to sham pleas of insanity, and courts seriously ponder over the violence of brainstorms. We are too humane to convict on circumstantial evidence, the only evidence without possible motive to lie. To withhold lawful punishment from this brood is to expose the innocent and endanger society; to punish with certainty is to protect society, lessen insanity and cool the heads of the violent.

To be commended are the courts of Virginia: Beattie said at last that circumstances had not lied on him; and McCue’s insanity did not lessen his crime or the consequence of it.

So with all our increase of knowledge and growth of humane sentiment, our utilization of natural resources and prevention of material waste, our marvelous national progress, the thoughtful man cannot fail to inquire if we are building character, making men and women, as well as we builded in former days. After all, are we not tithing mint and anise and cummin and forgetting the weightier matters of the law? Are we as law-abiding as we used to be; have we the old-time reverence for sacred things; do we reverence God and the State as our conscience and our conscience as the State and God? By the assertion of rights, are we not following the way of the prodigal who spent his substance in riotous living and would fain, at last, have filled his belly with the husks which the swine did eat?

If my son have not respect for my authority and the authority of the State; if he reverence not God and holy things; if he have not faith and hope and love abiding in him; if he have not respect for the rights of others and respect for himself; if he have not character; no wealth or knowledge of his can tell me that he is not a dangerous derelict without anchor, and I shall know that he is the heaviness of his father.

I am not preaching you a sermon—I am not cut out for that—but whatever of good there

is in me comes, I know, from that mature sentiment which, when the Sabbath dawns for man's rest, says "Come, let us go up unto the house of the Lord"; and, when I have entered, "The Lord is in his holy temple, let all the earth keep silence before him!"

Rights and not duties, selfishness and not service,—that all men are created free and equal, that every man is born an uncrowned king—here is our leakage; and we go to wreck upon the rock that all just powers of government are derived from the consent of the governed. It is not true. Our wilder western commonwealths are eating and offering us the toothsome apple of the initiative, the referendum and the recall, even of judges. For authority, law, order, under which alone abiding progress is possible, they would substitute the shifting whim of the multitude; for obedience and stability they offer us emotion; for progress, the mere turbulence of change. In the midst of it all, one feels like crying out—

"Ah God, for a man with heart, head, hand,
Like some of the simple great ones gone
Forever and ever by;
One still strong man in a blatant land,
Whatever they call him—what care I?
Aristocrat, democrat, autocrat—one
Who can rule and dare not lie!"

That all governments derive their just powers from the consent of the governed—it is not true. But this is true, that even a king must be a king, not for himself, but for his subjects. Until your uncrowned kings are developed to comprehend this in themselves, the just power of government, even for the sake of the development and safety of your uncrowned king himself, is founded in the duty which the greater man owes to the less. We governed Cuba till she was capable of self-government. We shall govern the Philippines till they are capable of self-government; it is our duty to them, and we do not ask their consent. We govern and care for the disfranchised negro in the South; the wiser of their race know that it is best. It is a matter of duty, not a question of consent.

One thing more. Whether there be startling political fads and graft in places low and high; mandolin sentiment for the criminal and slack enforcement of law; if we grow pessimistic and deplore the decadence of morals on every hand; if the moral stand aghast at the abundant grist of divorce mills; know that these things originate in one common source, the most appalling

source of social waste, the increasing laxity of family government. This is the one most baleful instance of assertion of rights and negation of duties.

It used to be said that the parent controlled the child; it is now a common saying that the child controls the parent. That the parent does not control the child is too grievously true. Parental authority in no sense depends upon the consent of the governed. It is inherent in parenthood; it is a duty which the parent has no right to disregard, whether for himself, for his child, or the State.

For the family is the indispensable social unit. The purpose of the family is the training of children to orderly life and citizenship. More and more the family is failing of its purpose. I must train my child in the way he should go for the child's sake and for society's sake. It is not a work which I have a right to do or not to do: it is my inalienable duty to him, to the State, and to God. I may not relinquish my work any more than the Creator of all things may abdicate his throne upon the circle of the heavens. So only can come among men the doing of justice and judgment. The Puritan may have been unduly austere, but the Puritan made men and women. To spare the rod even and so spoil the child, what is it but to take out of my child the best that is in him along with all his best possibilities? I, his king, will have robbed my subject and wasted the substance of the State.

Patriot and demagogue rant about rights of local self-government—let them descant less upon the beauties of it to the thoughtless, unbridled multitude; but rather, as fathers, let them teach it to their children—teach them obedience to divinely constituted authority and obedience to self. For "he that ruleth his spirit is better than he that taketh a city." So may crime be lessened and more surely punished; so may juries look up to God and care well for the State; these new mad-storms of reckless brains be lulled ere they rise; the company of the insane will grow smaller, and the number of hysteric women and psychasthenic men will grow less.

In the building of character, the right attitude of the soul of man, a work of early years, nothing can take the place of the family. The schools are only supplementary. And I pray you, O schoolmaster, teach my child both obedience and books if you can; but if you can

teach him no books, teach him obedience to you and control of himself—teach him this form of local self-government, this most vital, embryonic form of democracy.

It is said that "when the court chaplain of Frederick the Great was asked by that bluff monarch for a concise summary of the argument in support of the truths of Scripture, he instantly replied, with a force to which nothing could be added: 'The Jews, your Majesty, the Jews!'"—a people enduring, law-abiding, not much given to crime.

"And the Lord said, shall I withhold from Abraham that thing which I do, seeing that Abraham shall surely become a great and mighty nation, and all the nations of the earth shall be blessed in him? For I know him, that he will command his children and his household after him, and they shall keep the ways of the Lord, to do justice and judgment, that the Lord may bring upon Abraham that thing which he hath spoken of him." It would come in no other way; not even the Lord could bring it any other way!

Therefore, whoso shall rouse the heads of American families to resume their divinely rightful sway, to discharge to their children, the State, and to God their inalienable duty, he shall preserve our rights and prevent the waste of this nation.

SURGICAL CONDITIONS OF CHILDHOOD.*

By JOSEPH T. BUXTON, M. D., Newport News, Va.
Surgeon-in-Charge, Elizabeth Buxton Hospital; Vice-President Medical Society of Virginia, etc.

When Dr. Hancock did me the honor to ask me to address you to-night, and with a very limited time for preparation, I cast about for a subject which would be interesting and at the same time practical.

The literature dealing with the surgical conditions of childhood is comparatively meager. This may be accounted for by our failure to recognize existing conditions, owing to our dependence greatly upon objective symptoms and to the fact that general practitioners do not devote as much study to the infant and child as to adults. The following cases have occurred in my limited practice of surgery during the past few months, and I am reporting them because I believe that they may interest you.

Case 1.—A healthy looking female infant,

*Read before the Surgical Section of the Norfolk County Medical Society, at Norfolk, Va., at its January, 1912, meeting.

For discussion, see page 541.

five and one-half months old, was observed by its mother, on April fourth, to be in pain and to refuse nourishment. It was a breast baby and had not cut any teeth. Its mother, upon observing that the child was not well, administered a teaspoonful of castor oil. This, not being effectual, was followed by an enema, which produced considerable tenesmus with no other result. During that night it was very restless and vomited several times and strained constantly. Early the following morning it passed a bloody stool with a quantity of mucus.

Dr. George J. Williams, of Newport News, who was called in attendance upon the child, in turn, asked me to see it in consultation. Our visit was within the first twenty-four hours of the infant's illness. There was no fever. The abdomen was soft, and not distended, and could be easily palpated in every part. Upon deep pressure an elongated mass was felt. The right end was most distinct, and situated in the left iliac region. It could be plainly traced across the abdomen for several inches. A tumor could be felt by examination per rectum, examination always being followed by a great deal of tenesmus, followed by blood. Efforts to reduce the invagination by distending the colon by water pressure were not successful, the water returning by the side of the catheter in the rectum without producing any distention. Inflation by air was also resorted to without avail. That afternoon the patient's condition was worse and an abdominal section was performed.

Upon opening the abdomen the nodule was drawn into the wound and was found to consist of an ileo-cæcal invagination, eight inches long. The gut, in the course of the invagination, had evidently been the seat of local, previous inflammation, since the parts were much thickened and indurated. The appendix also showed signs of the general inflammatory process. The intussusception was reduced with comparative ease, the appendix removed and the abdomen closed.

Its bowels acted freely while on the operating table. The wound healed by first intention and the patient had no further trouble referable to the intussusception. For nearly a week after the operation it ran a very high temperature and very rapid pulse, with some acceleration of respiration, which I am inclined to believe was due to some obscure pulmonary condition not diagnosed by me.

Early recognition of the existence of intussusception is of the greatest importance for successful treatment, as the prospects for ordinary surgical means diminish with the development of secondary pathologic conditions at the seat of invagination. Experience has shown that a cure by spontaneous eliminations of the intussusception seldom, if ever, occurs in very young children and infants. Consequently, the hopelessness of the situation in such cases, where legitimate efforts at reduction have failed, can be advanced as the most logical reason in favor of operative treatment, as the patient and surgeon have nothing to lose and everything to gain. Treves gives the general mortality in 133 recorded cases as 72 per cent. When reduction was easy it was 30 per cent. and when difficult 91 per cent. Under proper treatment I do not believe that reinvasion will take place. However, it can be prevented by shortening the mesentery at the point of invagination by folding it upon itself in a direction parallel to the bowel.

Case 2.—Female. Five years of age. Occurring in my own practice, on May 10, 1910, was admitted to my hospital with the following history. Family history negative. Past medical history negative except for the following: For two years she had suffered with attacks of what were thought to be indigestion, which were accompanied with vomiting and abdominal pain, lasting from one to three days and increasing in severity. Upon admission her temperature was 102 degrees, respiration 26, pulse 110. During the previous night she had complained of severe abdominal pain, paroxysmal in character, and accompanied by vomiting. When seen by me she was quiet, not complaining of spontaneous pain, tender over the abdomen on both sides, especially the right, with a rigidity, also generalized, but most pronounced in the lower right quadrant.

The patient was operated upon sixteen hours after the onset of pain. A lateral incision was made through the outer border of the right rectus muscle. A quantity of free, cloudy fluid welled up through the wound upon opening the peritoneal cavity. The appendix, which was then brought into view, seemed to be gangrenous at its distal portion, and upon removal was found to contain a concretion. The appendix, when examined, was much inflamed, and gangrenous for about two-fifths of its length in its distal portion. Mucous membrane

was inflamed throughout, and with a large concretion in the gangrenous tip: there was no perforation. A cigarette-drain was introduced to the stump of the appendix and the incision closed with chromic catgut.

The patient made an apparently uninterrupted recovery and was discharged from the hospital at the end of two weeks. Three weeks after her discharge from the hospital I was called to see her, and found, upon examination, that the lower end of the incision showed some swelling and tenderness, with slight fluctuation. Thinking that there was a probable stitch abscess, I opened it with a bistoury and evacuated a small quantity of pus, after which I introduced a small piece of gauze drain. She came to my office daily to be dressed. The sinus, about two inches in depth, continued to discharge for a period of two months, at which time I advised a second operation. Upon opening through the line of the old incision, I discovered the cæcum adherent to the parietal peritoneum. The sinus leading to the stump of the amputated appendix was detached at the cæcum and delivered into the wound. I found the base of the appendix hard and infiltrated, and on pressure exuded pus. I excised the mass and closed the wound with chromic catgut. The operation was easily done. The patient reacted nicely and made an uneventful recovery. This condition was what Price has tersely called "stump trouble," and was not due to an infected ligature, overlooked enterolith, or other defect in the operation. It could probably have been avoided primarily by excising the appendix, though I have frequently left as much of the stump as was done in this case without subsequent complications.

Case 3.—White, male child. Four years of age. Was brought to the hospital on the evening of October 20th. It complained of a pain over the bladder region. This was about 11 A. M. No urine was passed from this time until the following morning, when I introduced a catheter into the bladder and emptied it. On withdrawing the catheter a stone was felt in the urethra. Upon further examination it was located in the bulbous portion. Owing to the smallness of the parts, no instrument could be introduced into the urethra that would grasp the stone. Being unable to dislodge it through the urethra, external urethrotomy was performed. Owing to the small size of the stone and its smoothness, it was extracted with diffi-

culty by means of curved forceps. It was an oval uric acid calculus measuring about one-fourth by one-eighth of an inch, and weighing three and a half grains when dried. A soft rubber catheter was tied in the bladder, which was removed at the end of three days and a silver catheter passed through the urethra. The perineal wound healed in about sixteen days and the child was discharged shortly afterward.

Upon looking up the literature on this subject, I find these cases comparatively rare, though not sufficiently so to prevent our bearing it constantly in mind in cases of retention of urine. Retention in children, I believe, to be reflex in character and not uncommon as the result of phimosis. These cases, when overlooked, easily lead to perineal abscess as well as to extravasation. Jobson, of Philadelphia, in the *American Journal of Medical Sciences*, January, 1910, reports such a case, which I shall briefly describe:

A white child, three years of age, had been observed for two weeks to strain while urinating and at stool. He had passed no urine for twenty-eight hours before admission, and had been very restless and cried a great deal during the preceding night. Upon the morning of admission it was noticed by the family that the abdomen, scrotum and thighs were swollen and painful. On admission the temperature was 97 degrees, pulse 132, respiration 32. General condition fairly good. There was observed a very great enlargement of the scrotum, the swelling also involving the perineum and extending upward over the abdominal wall as high as the umbilicus, and laterally to about one-half inch below Poupart's ligament on either side. The prepuce and sheath of the penis were also involved in the œdema. The prepuce could not be retracted sufficiently to expose the meatus of the urethra. During the short time the child was under observation before operation, about one hour, the œdema could be seen to extend downward on the thighs in a line parallel to Poupart's ligament. A diagnosis of urinary extravasation was readily indicated by the history and the distribution of the swelling. Under ether the prepuce was split up on its dorsum and a sound passed into the urethra. A calculus was immediately met with in the spongy urethra, about two inches from the meatus. With the child in the lithotomy position the urethra was opened upon the staff in the median line behind the scrotum, and after some

little difficulty the stone seized where it lay in the bulb and extracted. Incisions were made on either side of the scrotum, and in both groins, to evacuate the extravasated urine, an English catheter was tied in the bladder through the perineum, and the wound was dressed.

We are often led to suspect the presence of calculi in children, from the presence of bladder irritability when none exist, and will sound many children for stone unnecessarily; but it is a condition the possibility of which should never be forgotten if we would save ourselves on some occasion from a mortifying oversight.

Case 4.—Male child, ten years old; family history negative; past medical history negative. On February 15th, he was observed to be very languid, had no appetite and complained of pain in head and back, sometimes also in the abdomen. He developed a slight cough without expectoration. Upon admission on February 25th, his tongue was dry and brown, lungs negative, spleen palpable, abdomen slightly distended, and tender in the lower right quadrant, a few rose spots on the abdomen, temperature 102.4°, respiration 32, pulse 110, urine negative. The diazo and Widal reactions were positive. There was no diarrhoea. For the next few days after admission the temperature ranged from 101° to 103.4° with marked daily remissions. The treatment consisted of liquid diet and sponges with tepid water and alcohol. On February 23rd, his temperature reached 104.2° at 9 P. M., and then began to drop until at 8 P. M. the following day it reached 100.2°, a drop of 4.2° within a period of eleven hours. At 9 A. M. he was seized by a violent pain in the abdomen, extending from the ribs to the pelvis, this being accompanied by a slight chill. The abdominal muscles were rigid, more so on the right side than on the left, and there was marked tenderness in the right iliac fossa. He vomited several times. A leucocyte count made on the sixteenth showed 3,600. Six hours after the onset of pain the count was 10,800. The pulse rate was progressively increasing and reached 140.

A diagnosis of perforation of the intestine was made and the patient was operated upon within seven hours after the onset of pain. Under ether the abdomen was opened and found to be filled with fluid with a slightly fecal odor and there were evidences of a general peritonitis. A perforation was found in the ileum about six inches from the cæcum, about the

diameter of a knitting needle. Feces were oozing through the perforation. The perforation, along with the indurated area around, was invaginated by a double row of Lembert sutures and free drainage in form of cigarette drains and rubber tubes was introduced to the bottom of the pelvis and the site of the perforation, the wound being partially closed with catgut sutures. Upon leaving the operating table, his temperature was 98°, his pulse 140. The child was placed in Fowler's position and continuous saline proctocolysis administered. For the first twenty-four hours the child's condition seemed favorable. At the end of that time, however, symptoms of general peritonitis developed, pulse weakened, and the patient died about thirty-six hours after operation. I was unable to obtain atopsy.

According to Holt, in 1,028 cases, perforation occurred twelve times, or 1.1 per cent. Koplik gives a frequency of perforation in children of 1.2 per cent. and states that in severer forms of typhoid fever in children, perforation of the intestine is almost as frequent as in the adult.

Operative conditions show a higher mortality in children than adults, which in all probability is due to a lack of resistance to inflammatory processes. Their preparation for operation requires special attention. They should not go through the usual starvation and purgation processes. Dressings should be frequently inspected and infection prevented by urine or feces.

As an anæsthetic, I prefer chloroform as a rule. It should not be commenced until all preparation is complete and the operator is ready to begin. Some attention should be paid to the size of the instruments and frequently there should be special instruments for operative work in children. Every effort should be made to avoid the loss of blood and the danger of shock should be borne in mind. The operating room should be properly heated and the patient kept warm by the use of hot water bottles and blankets.

Finally, I should say that the operation should be performed as expeditiously as is consistent with good work.

Dr. Olin West, hookworm specialist, working under the direction of the Tennessee State Board of Health, in his annual report states that ninety-five of the ninety-six counties in Tennessee were infected with hookworm disease.

RATIONAL TREATMENT OF POST-PARTUM HÆMORRHAGE BASED ON ITS MECHANISM.*

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To give greater precision to the object of this short paper, let me say that I purpose to show that in post-partum hæmorrhage there is a lack, or inefficiency, of the normal mechanism for controlling hæmorrhage, and that a rational treatment must be based upon a knowledge of this mechanism. Three factors are potent in the control of hæmorrhage after childbirth; they are: (1) retraction; (2) contraction; and, (3) thrombosis of the venous sinuses of the placental site. I place retraction first, as it is the most important.

It is well here to state exactly what are meant by the terms "retraction" and "contraction," respectively. I cannot do better than to quote the words of Herman, as given by Kerr, in his excellent book,[†] by way of explanation: "Any one," says Herman, "who puts his hand on the abdomen of a woman who has just been naturally delivered will feel the uterus. It is firm; its shape is definite; its inner wall is applied to the placenta; its muscular fibres are grasping and constricting the vessels, and in this condition it remains. This is retraction. Every few minutes the uterus becomes smaller and harder; it grasps the vessels more tightly, and it squeezes the placenta; and if the placenta is loose, it squeezes it out. This is contraction." Contraction is intermittent and rhythmical. Retraction is a permanent quality of the uterine muscle by virtue of which, in a normal case, no bleeding follows a contraction, although the uterus is relaxed. It is the power of retraction inherent in the muscle that stops bleeding, rather than the intermittent contraction. As a consequence of defective retraction of uterine muscular tissue after expulsion of the placenta, post-partum hæmorrhage occurs. Under these circumstances the thickening and re-arrangement of the bands of muscular fibres which, under normal conditions, subserve the purpose of closing the opened utero-placental

*Read before the forty-second annual meeting of the Medical Society of Virginia, at Richmond, October 24-27, 1911.

†Operative Midwifery, Second Edition, page 610.

vessels, are lacking, the wall of the uterus is soft and flabby, and blood pours forth from the placental site in streams. This relaxed condition of the uterus constitutes *atony*.

There is a tendency to atony after speedy evacuation of the uterine cavity in artificial delivery, after the birth of twins, and when hydramnion exists. In these latter cases especially, in consequence of the immoderate distention of the uterine walls, great demands are made upon the retractive power of the muscular tissue and hence exhaustion follows. The prolonged exhibition of chloroform or æther undoubtedly constitutes a predisposition to atony. An overhasty expression of the placenta produces a like effect. Women who have borne many children, or who have suffered previously from difficult and complicated deliveries, or have had septic processes during the puerperium are liable to post-partum hæmorrhages. It is likely, as Bumm* conjectures, that in these cases the increased development of connective tissue between the muscular fibres acts as a bar to the normal retraction. It occasionally occurs that retraction is lacking at the placental site.

Examination reveals the existence of a depression or indentation on the well-retracted and hard uterus, which corresponds to the relaxed and bleeding placental site. This is known as "paralysis of the placental place," which is due either to excessive vascular development that causes atrophy of the muscular fibres situated between the vessels, or to the insertion of the ovum in one horn of the uterus, where the muscular tissue is feebly developed.

Another potent cause of atonic post-partum hæmorrhages is retention of portions of the placenta; shreds of amnion or chorion may be disregarded, but thick layers of the decidua basalis, hypertrophic on account of preceding endometritis, are dangerous. Large clots of blood in the uterus necessarily interfere with retraction and contraction; a full bladder has the same effect.

Prophylaxis is of the utmost importance here, and consists chiefly in the proper management of the third stage of labor. No wonder so many cases of post-partum hæmorrhage occur in the hands of the general practitioner or even obstetricians, when so many of the text-books teach such false doctrines. The golden mean is here to be followed, neither adopting the original method of Credé *in toto*, nor the expectant

plan of Ahlfeld. The best method is that recommended by Schröder—to await the time when the placenta has been expelled from the body of the uterus into the lower uterine segment, and is below the ring of contraction, then to use the Credé method of compression. After the birth of the child the hand should only safeguard, and no rubbing, kneading, etc., should be employed unless the uterus bleeds, or is relaxed.

Two signs show the detachment of the placenta: that of Ahlfeld requires the application of forceps, or a thread to the cord just before the vulva, at the time of birth; as soon as it descends 12 cm., it shows that the placenta is detached. Schröder and F. Cohen demonstrated that the expulsion of the placenta from the body was followed by the ascent of the fundus above the umbilicus, at the same time being narrowed, while above the symphysis ossium pubis, a soft protuberance was formed, separated from the body by a furrow, indicating the placenta in the passageway. Two conditions must be fulfilled before compressing the uterus—one, that the uterus is in the state of contraction; and, secondly, that it lies in the median line, about in the direction of the axis of the superior strait.

Supposing you are called to a case of post-partum hæmorrhage, and find the placenta has been already expelled, that laceration of the cervix may be excluded, that consequently it is a case of atony of the uterus, what are the indications of treatment? The first and simplest is to endeavor to rouse the dormant energies of the uterine muscular tissue, excite it to contraction and induce that state of tonic retraction so necessary to the permanent safety of the patient, by *massage* of the organ from the abdomen. When the atony is excessive it is difficult to feel the uterus through the abdominal walls, it is so soft that with difficulty it can be discriminated from the other abdominal organs. After repeated feeling and kneading the fundus becomes plainer in its outlines. The uterus may be so distended with blood coagula as to reach up to the arches of the ribs. It is compressed and the blood and clots forced out, continuing the massage until the contraction and retraction are assured. With the massage is united from time to time compression of the body of the uterus, as in the Credé method, so as to bring the posterior wall into firm approximation to the anterior. Bumm suggests that

*Grandriss zur Studium der geb. 5 te Aufl. s. 631.

compression of the aorta against the lumbar vertebræ may be tried from time to time, as the arterial anæmia of the uterus thereby effected is a very intense excitant of contraction, and usually, soon after the compression of the aorta, a strong and long-lasting contraction appears.

If the bleeding is not controlled by massage, the next indication is to use hot water injections into the uterine cavity. In 1876, I had the honor to read a paper on this theme before the New York Obstetrical Society, and beg to quote the following passage from the *Transactions*: "Those who have witnessed at Dr. Emmet's clinique, at the Woman's Hospital, in cases where he has removed a fibroid growth or polypus from the uterus, the quickness and certainty with which hot water injections into that organ, as employed by this surgeon, have brought on uterine contractions and controlled all bleeding, need not be told that it is invaluable in post-partum hæmorrhage. The power of the hot water, when injected into the uterine cavity, of exciting the muscular fibres to energetic action is truly remarkable." At that time no one had used this remedy, to my knowledge, in this country. Now it is employed all over the world. To the hot water, creolin of the strength of one drachm to the pint may be used, or one per cent. lysol, or a weak solution of potassium permanganate. The temperature of the water should be from 110 to 118 degrees Fahrenheit.

Should this method leave us in the lurch, do not waste time with uncertain remedies, but proceed at once to tampon the uterine cavity with iodoform gauze, after the method introduced into obstetrical practice by Dr. Dührssen. The patient lies on her back. I always operate on a table, if possible; if not available, place her transversely on the bed. The bladder is emptied, a posterior retractor (and an anterior one, if you have it) is introduced, and the cervix is exposed. The anterior and posterior lips are seized by bullet forceps, respectively, and the cervix brought down to the vulva, so that the *os uteri* comes into view. One retractor is usually sufficient, and even that may be dispensed with in case of necessity. Strips of gauze are carried into the uterine cavity by forceps, a packer, or by the hand of the operator, an assistant steadying the uterus by holding the bullet forceps. One hand co-operating above the abdominal walls, easily determines whether the gauze is introduced into the uter-

ine cavity. It has happened that the gauze did not pass the ring of contraction and so failed of its purpose. At first blood flows alongside the gauze strip, but soon the bleeding becomes less and less with the increasing retraction and the cavity smaller, so that finally a smaller amount of gauze is required to tampon the uterus firmly and compactly than seemed possible in the beginning. To keep the gauze *in situ*, cervix and fornix vaginæ are firmly tamponed as well as vagina. The gauze tampon operates in two ways as an hæmostatic: in the first place, as an irritant body it evokes powerful contraction and retraction; in the second place, it acts by direct compression of the venous sinuses in the placental site. In twelve hours the tampon may be removed without danger of a recurrence of the bleeding.

Every physician who attends obstetrical cases ought to carry in his bag a jar or box or can of iodoform gauze. In case of lack of assistance the physician may, with the patient on her back, seize the uterus from above, and with two fingers of the other hand carry the strips of gauze into the vagina and through the cervix into the uterine cavity, the fundus being pushed down by the co-operating hand above. As Bumm truly remarks, the disadvantage of this latter method is the difficulty of maintaining asepsis. And nowhere is it more important that just in these cases to carry out the principle of asepsis. "In these cases," says Fritsch, "when one comes to a recently delivered woman, with an already bad sensorium almost exsanguinated, rather dying than living, consequently in atony of the highest degree, I apply the following procedure: The uterus may be easily seized and expressed immediately post-partum, even in thick abdominal coverings, especially if one uses massage and pushes the recti aside. The blood that is effused is already lost so far as the woman is concerned. It must be quickly removed by pressure. The uterus is lifted up high by passing the hand on the posterior side. The uterus is pressed into a forced anteflexion position on and over the symphysis. It is brought into a position of decided anteposition. The inner *os uteri* lies about just over the crest of the pubis. The abdominal coverings are pressed down deep behind the uterus into the superior strait. The space behind the uterus, the thus originating funnel, is filled with handkerchiefs, pieces of linen or cotton cloth, or, if at hand, balls of cotton, so

that the uterus is pressed forward against the abdominal walls. Then the mass behind the uterus is pressed downwards deep by means of a roller bandage, firmly applied, so that the abdominal walls form a funnel almost reaching into the superior strait. The corpus uteri lies, consequently, on and before the symphysis. Some turns of the bandage which pass over the fundus uteri underneath the other bandage press the walls of the uterus firmly together, it being in strong ante-flexion, * * * an accumulation of blood in the uterus is impossible, since a uterine cavity does not exist. The dressing is not removed before the expiration of twelve hours. After its removal the uterus sinks back into its normal position, the vessels meanwhile having been closed by thrombi." The advantages which Fritsch thinks appertain to his method are:

1. The abdominal cavity is compressed. The little blood remaining is retained in the upper half of the body and is better than employing compression of the aorta or applying bandages to the legs.

2. No more blood can escape from the uterus. Its walls are pressed against each other and no cavity exists.

3. Too much time, he thinks, is lost in the application of the tampon. An inexperienced physician takes a long time to find the os uteri when he has no assistant at hand. He saw several cases in which, after the final completion of the insertion of the tampon, the women died in spite of normal salt solution, etc.

4. His method has the advantage that any physician may apply it immediately; that there is no necessity of disinfection, if there is danger in delay; but that immediately without the loss of a second of time, the compressing dressing may be applied.

5. A further advantage is that after the dressing is applied the woman is left at rest. All general therapeutical measures necessary may be employed without disturbing the patient.

6. Lastly, it must be admitted that an extra-vaginal mode of treatment is to be preferred to an intravaginal one.

I need hardly say that I generally make use of hypodermic injection of ergot as an auxiliary means. I have designedly said nothing about lacerations of the cervix as a cause of post-partum hemorrhage. I had the honor of reading a paper on the treatment of deep lacerations before this society several years ago.

THE ASSOCIATION OF TRANSITORY PHYSICAL SIGNS IN THE LUNGS WITH INCIPIENT TUBERCULOSIS.

By MARY E. LAPHAM, M. D., Highlands Camp Sanatorium, Highlands, N. C.

In taking a patient's history we always ask: "How long is it since you were well?" and the answer, in nine cases out of ten, is: "Since I had a cold or 'grippe' or measles, whooping-cough, or typhoid," etc., so and so many years ago.

In the majority of our cases, two points are very conspicuous: the patient has not been well for a considerable length of time, and an undetected tubercular process has existed in the lungs for even a greater length of time.

It is almost universally believed that if we can "find nothing in the lungs," there can be no structural changes in the lung tissues. No physical signs, no structural changes is a well accepted dogma, although nothing could be more fallacious, more misleading or more dangerous for the patient. The extent of structural changes in the lungs is always far greater than the physical signs indicate, and absence of physical signs means simply that the structural changes are not extensive enough to manifest themselves to our methods of perception.

It is impossible to estimate the latency of a tubercular process or its probable duration, but the histories all suggest a greater length of time than is ordinarily supposed and the condition of the lung usually implies a still longer period, so that it is often safer to say that a tubercular process has existed so many years rather than so many months. The extraordinary inertness of the tubercle bacillus causes an extraordinary period of latency in its manifestations. Aside from the ability to multiply, the living bacilli have very little more effect upon the lung tissues than dead ones. There is no aggressiveness in the attack, it is simply the chemical irritants contained in the organisms that destroy. Since these organisms are so inert and have no power of motion, it is *a priori* probable that their presence can be successfully resisted in the vast majority of cases. From 65 to 90 per cent. of autopsies have shown tubercular lesions, so that we may well ask, why is it that so many recover without the process ever having been suspected? On the other hand, why is it that so many fail to recover and that one-seventh of all deaths is due to tuberculosis?

In both cases the reason is the same. The insidious nature of the invasion allows recovery or extensive preparation to be equally well accomplished without detection. In either case, whether going on to recovery or to death, the first stages are absolutely unsuspected. Let us schematically imagine the development of a tubercular process, and its relation to physical signs. Because of some slowing in the current carrying them along, the bacilli are arrested, usually in the paravertebral region, above the second rib.¹ They cause a slight irritation in the surrounding tissues, evidenced by dilatation of the blood vessels with consequent exudation and eventual hypertrophy. The area and exudation is the central point of danger, for in it are the bacilli and their destructive agencies. Surrounding this area, and at a sufficient distance to obtain dry ground, the tissue cells proliferate and encapsulate the enemy. If there is good, firm, dry ground, a dry, durable, tubercle is formed and the defense succeeds at the first effort. If there is too much exudate, the line of defense must fall farther back until dry ground is reached. If the exudate is too great, these lines will fall farther and farther back until dry ground is finally found, although in so doing many similar lines will meet, enclosing several foci of attack and a conglomerate tubercle is formed.

If proliferation finally triumphs over exudation the invaders are temporarily imprisoned and the process temporarily arrested. Since the enemy has absolutely no power of motion the danger would seem to be over. Not so. The encapsulated area is not in harmony with the character of the surrounding tissues. It is an irritating foreign body, and the rigidity of its infiltrations interferes with the proper expansion and collapse of the adjacent alveoli. The blood vessels are sensitized by the tubercular toxins so that they are more pervious, more susceptible to any irritation, and having lost much of their tone, there is a marked tendency to dilatation and exudation upon the slightest provocation. This tendency is further aggravated by the fact that the encapsulated area obstructs and blocks the vessels leading up to it. The blood coming up to these walls is turned back, and thus the danger of leakage is increased and is greatest right at the edge of the encapsulated area. When the pressure in the vessels becomes sufficiently great, they will leak, and this seepage will back up into and perme-

ate the encapsulated area with danger of washing out the bacilli and transporting them to new fields. If the leakage is great enough this will surely happen.

A cardinal factor in recovery is the maintenance of the balance of circulation in the juxta-tubercular area. As long as these vessels do not leak, the tissues are dry and resistant and the encapsulated area holds its own. The dangers increase with the loss of competency in the juxta-tubercular circulation and the consequent inundation of the surrounding lymphatics. Anything that upsets the balance of the juxta-tubercular circulation will fill the alveoli with a serous effusion, which, if long enough maintained, will cause desquamation of the alveolar cells, exudation of leucocytes into the alveoli and the microscopic picture of desquamative or catarrhal pneumonia. These juxta-tubercular collateral edemas are important factors in the extension of the tubercular process, for they drown out the vitality of the tissues, and, surging back into the encapsulated areas, threaten to wash out the bacilli into tissues so non-resistant that they are almost specially prepared for their reception. These microscopic extensions of microscopic processes go on indefinitely, quite unsuspected and unobserved because of the absence of physical signs, until the day comes when the extent of the affected area is great enough to influence the breath sounds.

Ordinarily the infected area may not be able to alter the breath sounds, but, if anything happens to upset the balance of the juxta-tubercular circulation, the consequent hyperemia and collateral edemas may betray themselves by rales and altered breath sounds. An infinite variety of causes can do this. Broadly speaking, anything putting a strain upon the general circulation will be less sufficiently resisted by weakened than by normal vessels. Any toxin, any irritant, any sudden rise or fall of blood pressure, any failure of cardiac or vasomotor force will be felt in these weakened vessel walls more than in normal ones. The toxins of a cold, or grippe, or typhoid, or measles, or whooping cough, or any acute infection, affect the general circulation, but coming to the weakened vessel walls of a juxta-tubercular area, they may cause a dilatation that cannot be resisted, so that the vessels leak and the lymphatics are flooded. Under these conditions we may detect altered breath sounds

due to the hyperemia and collateral edemas. As the influence of the upsetting factor is removed, the balance of the circulation is restored, the leakage ceases, the edemas are absorbed and the breath sounds become normal. Thus it is that a tubercular process may betray itself when too great a strain is placed upon the adjacent circulation, and these transitory physical signs that appear and disappear so suddenly, should be of the greatest value to us by suggesting the tubercular changes underlying their manifestation.

A patient comes to us with a cold and we find some irritation in one lung, hardly enough to define, "just a little catarrh," we say or "congestion." After a few days the physical signs disappear, and we dismiss the case with the assurance that all is well, without ever asking ourselves why these altered breath sounds should be heard in that particular part of the lung, or ever once endeavoring to associate localized, permanent anatomical changes with these transitory, physical manifestations. The fact that normal breath sounds reappear is regarded as proof positive that there are no permanent structural changes in the lung tissue. It never occurs to us that a tubercular focus may be too small to manifest itself by physical signs, but that, under the influence of an irritant, the hypersensitized tissues surrounding a tubercular focus may be sufficiently affected to cause hyperemia enough to alter the breath sounds. We should be on our guard when this occurs, and not be misled by the return to normal sounds, because this flaring up of temporary physical signs is a danger signal of the utmost importance, and upon the association of these transitory physical signs with the underlying tubercular process, hangs the future health of our patient.

A patient comes to us because of a dry, hacking cough, with no expectoration. The cough is in no way alarming, merely persistent and annoying. There is no temperature, and the most careful examination of the lungs reveals nothing. We give some sort of a cough sedative and tell the patient that there is nothing the matter with the lungs, and all the time there is a tubercular nodule too small to be detected by physical signs pressing on some nerve-ending, so that the cough keeps up until by and by the patient comes back again, complaining of loss of strength, and appetite and weight; and now we find a slight dullness at the apex

and altered breath sounds. We tell the patient that there is a "little bronchitis" or a "slight catarrh of the apex," but we do not always say that this "slight bronchitis" is the beginning of the end, and we may not even know that our ignorance and lack of skill has enabled the tubercular process to grow from microscopic to recognizable dimensions before we could detect it.

When once the peri-tubercular vessels have become well sensitized, it takes very little to upset their balance. Overwork of any kind, whether intellectual or physical, whether for child or adult, the heat of the sun or simply being overheated, menstruation, errors in diet, and the toxins of any acute, infectious disease, especially colds, measles, whooping cough and grippe may be sufficient. We discover signs of bronchitis and we put the patient to bed. Because the strain is taken off from the peri-tubercular circulation, the hyperemia subsides and the rales are absorbed. Now we are sure that the patient is all right and fortunate will he be if he spits a little blood so that the truth is discovered. Unfortunately, there are many of us who still refuse to see, and insist that there can be no tubercular trouble because "there is nothing in the lungs," and because several preceding attacks of hemoptysis have not meant anything. Again and again the red flag is displayed and we calmly say, "Oh, this is just like the others, it means nothing." A little rapid exercise, a little overstrain and a little spitting of blood means trouble even if there are no physical signs to convince us.

An extraordinary frequent cause of error is grippe. An enormous number of tubercular patients say "I have never been well since I had the grippe, so and so many years ago." What is the relationship of grippe to tuberculosis? If it is a case of grippe bronchitis in a tubercular lung, the result may be a very rapid and fatal hastening of the process. If it is grippe elsewhere than in the lung it may simply bring out manifestations of a tubercular process that would otherwise have escaped our attention. We carefully keep track of the physical signs, and as they subside we infer that all is well. In every case of grippe, if the physical signs are diffused and bilateral, or are of the nature of lobar- or broncho-pneumonia, we have possibly a case of grippe in otherwise healthy lungs; but if, after the general process has run its course, or, if from the begin-

ning its influence is restricted to a localized portion of the lung, especially of the apex, let us remember that grippe causes a localized bronchitis around tubercular areas. Generally speaking, localized bronchitis of the apex, associated with grippe should exclude the idea of its being purely due to grippe, and should always arouse the suspicion of an underlying tubercular process.

Another most significant sign of unsuspected tuberculosis is the effect of menstruation.² When a young girl or grown woman shows at the menstrual period a repeated tendency to roughness of the voice, to coughing, to pain under the shoulder blade and frequently to a few rales, this case should be carefully studied, for it is quite possible that there is a tubercular focus in the apex that is absolutely latent during the inter-menstrual period. The influence of menstruation is towards a fall in blood pressure and vaso-motor relaxation, which may occur before, or during, or after menstruation; when it comes, then the peritubercular circulation loses its balance, the blood vessels are overstrained, there are hyperemia and rales and wet places. After a few days all this disappears: the cough, the rough voice, the pain under the shoulder blade are all gone, and we fail to grasp the significance of the situation and let the patient go on until the nature of the trouble is only too easily detected. This is especially unfortunate, because it is precisely this class of cases that are predestined to difficult recovery, when once the influence of what Turban has called "vicious" menstruation is established; when the tubercular process affects menstruation and menstruation affects the tubercular process, the outlook is gloomy indeed.³

Anything causing dilatation of blood vessels will cause a localized hyperemia around a tubercular focus. An error in diet that would cause a rash, or erythema, or eczema or urticaria, or any other manifestation of an exudative diathesis, in a tubercular subject will cause fever, cough, and an abundant expectoration. If any reduction of circulatory force is made, whether of vaso-motor or cardiac origin, these weakened vessels will feel it and lose their balance. Thus it happens that many a tubercular patient who has ordinarily sufficient circulatory force, suffers from localized edemas around a tubercular focus whenever he is fatigued or overworked. If the cardiac force becomes weakened, then anything may happen. We find "a

slight congestion," localized, and there is a little fever. If we put the patient to bed, it may pass off in a short time. If the patient is not looked after, collateral edemas result, causing an accumulation and increased absorption of toxins, drowning out the vitality of the tissues, and threatening an extension of the process. This may go on indefinitely if not detected until high fever and possibly a hemorrhage reveal the condition.

Summary.—Localized, transitory areas of pulmonary hyperemia are characteristic of a tubercular process too small to ordinarily manifest itself by physical signs. If the significance of transitory physical signs in the lung were always tested by tuberculin, would not this aid in the recognition of incipient cases of pulmonary tuberculosis?

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THE VALUE OF VINEGAR IN OBSTETRIC WORK.*

By LLEWELLIN ELIOT, M. D., Washington, D. C.

It is not my intention to present a paper for your consideration, but a desire to learn to what extent vinegar is used in the management of post-partum hemorrhage, a treatment which has given me the most pleasing results.

In the practice of obstetrics, we will, at times, encounter hemorrhage of an appalling nature, when we will be ready to adopt any measure or apply any remedy, in order to stop the flow of blood and thereby save the life of the woman. On several occasions such has been my predicament.

Among the causes of post-partum hemorrhage are rapid delivery, adherent placenta, tired uterus from long labor, rough manipulations, and a hemorrhagic diathesis, any one of which will cause anxiety.

Under ordinary circumstances in labor, the fluid extract of ergot, pressure, or kneading will be all that may be required; in cases of greater severity irrigations of the uterus with iced water, in addition to ergot and grasping the uterus through the abdominal walls will suffice. There is, however, another class of

*Read at a meeting of the Medical Society of Georgetown University, November 11, 1911.

cases where we find the flow of blood so free and continuous that is bids fair, if not arrested, to result fatally. Here we are advised to pack the uterus with gauze, introduce bits of ice, give hypodermics or ergot, enjoin quiet, apply a band around the body; frequently we stop the bleeding, but the woman eventually dies of shock or exhaustion, or passes through a long period of convalescence.

Few of us can successfully pack a uterus with gauze, when the family, wild with consternation, insists upon being in the sick room. To them the various preparations for the operation, the drawing down of the uterus, appear cruel in the extreme, still they urge something be done.

The most recent article I have seen upon this packing is by Gillespie, who condemns it as inefficient as well as difficult. We are advised to include a bottle of acetic acid in our obstetric bag. Formerly lemons or citric acid were suggested; when none of these are available, there are few households where vinegar cannot be obtained at a moment's notice. If it is sterile, all well and good: if it is not, it will work just as well. So far as I know, vinegar for post-partum hemorrhage was first suggested and used by Miltenberger, of Baltimore, Md., many years ago. My first experience with vinegar in post-partum hemorrhage was thirty-two years ago, and the results which have followed in other years have made me feel less anxious when such a case presented.

Case 1.—Irregular contraction over the placenta. Hemorrhage, August, 1879, S. S., W. F., Va., 3-para. Placenta removed with the hand; severe hemorrhage; fluid extract ergot and pressure failed; iced applications, then uterine irrigation with vinegar and water, equal parts. Hemorrhage stopped and patient went on to a good convalescence.

Case 2.—Tired uterus from prolonged labor. Hemorrhage, October, 1879, C. W., F. C., Va., 2-para. Profuse post-partum hemorrhage; fluid extract ergot, iced water applications, irrigation with iced water, finally vinegar. Recovered.

Case 3.—Retained placenta. Hemorrhage, October, 1881, D. G., W. F., Md. Called by "granny" near the jail. Child had been delivered, but from the traction made, the cord had parted and the placenta remained within the uterus; bleeding was very free. Being stationed at the Washington Asylum Hospital, I

was sent for by the family. Ergot had been given. The hand was introduced and the placenta extracted, but the bleeding continued. At this juncture vinegar—half strength—was injected through a dirty syringe borrowed from a neighbor. No further bleeding followed and the woman finally recovered.

Case 4.—Rapid labor. Hemorrhage, April, 1890, H. F., W. F., Poland, 26, 4-para. Labor 5:45 to 7:03. Considerable hemorrhage. Given four doses of ergot; cold applications; kneading; vinegar injection; recovered.

Case 5.—Uterine inertia; adherent placenta. Hemorrhage, August, 1891, M. E. D., W. E., D. C., 41. 13-para. Adherent placenta in every labor. Was given A. C. E. mixture. Placenta extracted; profuse hemorrhage. Ice passed into the uterus and held there with the hand while pressure was made from without; ergot given by hypodermic. Vinegar in full strength injected; bleeding checked; recovery.

Case 6.—Breech, footling, forceps to after coming head. Hemorrhage, December, 1892, L. F. O., W. F., Pa., 24, Primipara. A. C. E. mixture. Free bleeding. Ergot by hypodermic through the abdominal walls into body of the uterus. Irrigation with vinegar and water. Bleeding checked, but a high grade of fever followed and convalescence was slow.

Case 7.—Placenta previa ventralis. Hemorrhage. Death, February, 1893, F. E. S., W. E. Md. 33, 3-para; in the sixth month. Was seen at her home some distance in the country. As she had been packed and given ergot and the bleeding stopped, advised she be left alone; should there be a return of the bleeding deliver without delay. Everything went on quietly until March 8th, when hemorrhage recurred and she was delivered by version before my arrival. The hemorrhage was very free; ergot was given by hypodermic, and ice placed in the uterus. Irrigation with vinegar failed, the uterus drawn down, a gauze bandage was soaked with vinegar, and this was packed in tightly. The bleeding now stopped. Stimulants were given; strong coffee injected into the rectum. Patient died three hours after delivery.

Case 8.—Complication variola. Hemorrhage, May, 1896, S. F., C. F., Va. Was admitted to hospital suffering from variola with eruption in an advanced stage. Delivered with forceps of a still-born male child under chloroform. Hemorrhage was very profuse, as is always the

case in labors occurring in those with variola. Ergot given; iced water irrigations, then one of pure vinegar, but much greater in quantity than in the other cases. Recovery was slow.

Case 9.—Twins. Hemorrhage. Convulsions. July, 1896, L. B. E., W. E., Virginia 18. Primipara. Called by midwife. Was in her eighth month. First child delivered at 10:56, second at 11:09, just thirteen minutes apart. Hemorrhage followed, finally controlled by irrigation with pure vinegar. On the next morning convulsions occurred, but they yielded to tincture of veratrum viride. Had a slow convalescence.

Case 10.—Abortion, third to fourth month. Maceration of fetus. Hemorrhage. August, 1911, H. E., W. F., N. C., 28. 2-para. Fell down a flight of steps; had some abdominal pains which passed away after an anodyne. Called her physician two weeks later when he found evidences of beginning abortion; tamponed and enjoined quiet. Upon removal of the tampon the fetus was coming down, footling; the least traction caused some portion to come away. At 9:30, I was called. Found cord prolapsed with portions of the fetus and placenta still in the uterus. The fetus was finally extracted in small pieces; the placenta came away. Chloroform was used. The bleeding during the extraction of the macerated fetus was so great that vinegar irrigation was used, and again after completion. There was nothing to note during the convalescence.

Such has been my experience; take it for what it is worth.

1106 P. Street, N. W.

A CONGENITAL FORAMEN IN THE MESENTRY.

By F. P. SMART, M. D., University, Va.

Anatomical Laboratory of the University of Virginia.

The mesenteric hole that I wish to report was found in a male subject in the dissecting hall of the University of Virginia. The hole was situated near the bowel in the mesentery of the ileum just a few inches from the ileocecal valve, was oval in outline, had smooth thickened edges lodging a loop of the ileac branch of the ileo-colic artery, and measured two and one-half inches by one and one-half inches. There was nothing found which in any way threw any light on the cause of this anomaly; furthermore, all the surrounding structures seemed to be quite normal and

healthy, hence it is probable that the defect was congenital and not of traumatic origin, and that it had never caused any great inconvenience to its possessor.

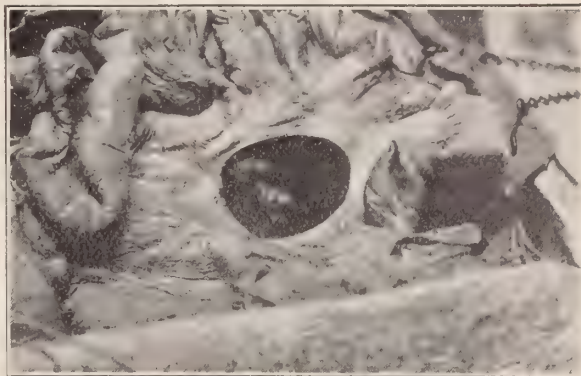


FIG. 1.

I could find remarkably little literature on the subject. Nowhere have I seen any attempt at an embryological explanation of such foramina, but several authors mention the fact that they do occur; for example, Adami in his Pathology, in speaking of the congenital anomalies of the peritoneum, says: "The mesentery may be abnormally long or short, or may present defects in its substance. This latter condition is of practical importance, since coils of the bowel may become prolapsed through the opening resulting in obstruction or strangulation." (Adami's Pathology; Vol. II, p. 509.)

In Keen's Surgery (Vol. IV, p. 665) there is a description of "a case of a child in which there existed an atresia and hypoplasia of the ileum of a congenital character, resulting from the fetal displacement of the bowel into an opening in the mesentery. In this case, death having resulted from the intestinal occlusion, a post-mortem examination was made upon the body of the child, which had lived but three or four days. The thoracic organs were normal. The stomach, duodenum, and jejunum were normally formed, as was the case with the uppermost loops of the ileum. About 60 cm. above the ileo-cecal valve the ileum was enormously dilated and hypertrophied, showing here and there a diameter of almost 4 cm. The distended part was 40 cm. long. At the central end of the distended bowel, that is, 55 cm. above the ileo-cecal valve, the intestinal wall was very much thinned and showed a perforation of a pin's head size. At about 20 cm.

above the cecum the distended part passed over sharply into a very narrow part of the bowel which ended 3 cm. above the cecum and was 18 cm. long. The colon and rectum were normally formed. The hypoplastic part of the ileum fitted exactly into a gap in the mesentery. The author believes that during fetal life the hypoplastic part of the bowel had occupied this space in the mesentery and had therefore failed to develop."

At another place in the same work the author says, "Congenital openings in the omentum and mesentery occasionally permit a loop of bowel to enter and become occluded. Adventitious openings due to productive peritonitis are common sources of such trouble." (Keen's Surgery, Vol. IV, p. 665).

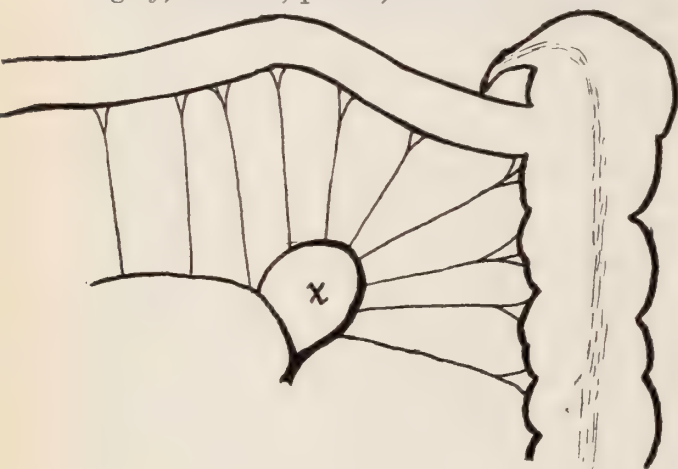


FIG. 2.

The best account that I found of mesenteric holes was in Sir Frederick Treves' book on "Intestinal Obstruction." After discussing slits and apertures in the mesentery due to violence, he says: "In other examples of this variety of obstruction there is practically no doubt but that the abnormal aperture is congenital. The edges in such instances are smooth, rounded and regular; there is no history of injury and no trace of previous peritonitis. The hole is found in the mesentery of the terminal part of the ileum, and is close to the bowel. The hole is generally circumscribed by an anastomosis between the ileo-colic branch of the superior mesenteric artery and the last of the intestinal arteries.

"A common situation for the hole is shown in Fig. 2 (X). I have frequently found this particular spot in the mesentery of the fetus

marked by an area of peritoneum which is entirely devoid of fat, of glands, and of blood-vessels.

"In the fetus at full term, and in children before puberty, this area is usually about the size of a shilling piece. The margins of the district are marked by the arteries named, and are occasionally rendered more pronounced by some opacity of the membrane. It is easy to understand that a little atrophy of the well-defined and transparent area of peritoneum just described would lead at once to the formation of a hole.

"In the body of a man aged fifty-two, I found this particular area in the mesentery very pronounced. It formed a patch of oval outline measuring one and three-fourths by one and one-fourth inches. It was entirely devoid of visible vessels, of glands, and of fat; while the adjacent mesentery was quite opaque from adipose tissue. The margin of the space was markedly opaque, thickened, and abrupt, and was skirted on the side nearest the cecum by one of the terminal branches of the superior mesenteric artery. The serous membrane which formed this area was very thin and clear, and so atrophied that it was cribriform, being pierced by about twenty holes. It was evident that but a slight degree of force would be required to drive a knuckle of bowel through this wasted membrane and so produce a strangulation through a 'mesenteric hole'.

"Mr. Partridge has recorded a case, which is probably unique, of strangulation of a knuckle of ileum through an aperture in the mesentery of the vermiform appendix."

It is obvious that this man whose case we are reporting was carrying around in his abdominal cavity a trap which might have readily led at any time to occlusion or strangulation of the intestine. It is possible that the large size of the hole is what prevented such an accident, coils of intestine passing freely in, and as freely out of the foramen without causing obstruction or strangulation.

VACCINE THERAPY IN CHILDREN.*

By J. WARREN WHITE, M. D., Norfolk, Va.

While the value of vaccines in the treatment of adults has been definitely established, there is very little to be seen in literature concern-

*Read before the Pediatric Section of the Norfolk County Medical Society, at Norfolk, Va., at its January, 1912, meeting.

ing its use in infants suffering with the same infections.

When a patient becomes a victim of a bacterial infection, the protective powers of the body are immediately called into play, with the eventual establishment of an immunity if these protective substances act effectively. Many theories have been advanced to explain this protection, Wright showing that there is present in the body a fixed amount of protective substance which he calls opsonin, whose function is to prepare bacteria for ingestion by the leucocytes. An infected person has less of this specific substance, opsonin, than a normal person has, a deficiency that may be overcome by injecting a vaccine made from the dead culture of the infecting organism; by repeating these injections at proper intervals, opsonin may be maintained at, and above, normal, enriching the blood in protective substances and hastening the establishment of immunity.

The method of the preparation of this vaccine is comparatively simple. The organism to be used is grown in pure culture upon a satisfactory medium; the culture is then taken and shaken, with normal saline solution and then standardized, so that each cc. will contain a given number of bacteria; then heated to 60 C. for thirty minutes to kill the bacteria. The total number of bacteria being known, the requisite number for an individual may be easily computed.

There is no difference in the application of this treatment to children and to adults, except as to the size of the dose, which varies with the age as in all other remedies. Most investigators advocate small doses to start with, but fortunately, it does not appear to be of great consequence as alarming reactions do not appear to follow large doses.

Hamilton, in a recent number of the *Journal of the A. M. A.*, reported eighty-four cases of gonorrhœal vulvo-vaginitis in children, treated with vaccines. He began with subcutaneous injections of fifty million bacteria, increasing ten million every fifth day; the acute cases at once improved, and there was a disappearance of the gonococci in each of them after the sixth injection. As to scarlet fever, many scientific writers still think that the streptococcus is merely a secondary organism invading soil prepared by some unknown agent.

It is somewhat of a paradox, therefore, that scarlet fever may be prevented by vaccinating

with killed streptococci taken from a scarlet fever patient, but this is the nature of a report from Russia, when, in a series of fifteen thousand cases vaccinated, the conclusion is reached that three injections extending over a period of two weeks will protect from scarlet fever.

The author writes that with greater refinement of technic and newer methods of differentiating the many strains of the streptococcus, there will come a more definite knowledge of the part each plays in the production of different morbidities, one of them in, all likelihood, being scarlet fever.

The study of the effects of vaccines in the pneumonias of children has not been extensive.

Morgan and Wright, in a recent number of the *British Medical Journal*, report twenty-four cases of lobar pneumonia treated with autogenous vaccines, in some of which the duration of the disease appeared to be shortened; but in the protracted cases, where tissue resistance was being slowly overcome, the results were of striking significance, the symptoms abating with remarkable promptness upon the injection of vaccine.

Staphylococcus infections are much more susceptible to treatment with stock vaccines, differing thus from the streptococcal because of the small number of strains, and thus the use of stock vaccine is quite effective in furunculosis, carbuncle, and abscesses.

Tuberculin exercises a favorable influence upon tuberculosis, tending to impede its progress, without in any way injuring the child's development. It has been considered safer to give it in minute doses, but Schlossman, in consideration of more recent discoveries, gives it in very large doses, and strongly advises others to do the same thing if they would obtain results. However, he starts with small doses, and having established tolerance, rapidly increases to larger ones.

Among the diseases of childhood, none occupies a more prominent position, on account of complications, than pertussis,—the frequency of emphysema, pneumonia, convulsions, and the possibility of a fatal termination, make it at all times a disease of serious consideration. About fifty per cent. of all cases occur in the first two years of life; like one or two other morbidities, it has a predilection for early childhood.

It is, of course, contagious, and is caused by a micro-organism that is now believed to be the bacillus described by Bordet and Gay. This

appears to be a very short ovoid bacillus, so short, in fact, that often it may be mistaken for a micrococcus. Bordet has obtained an endotoxin from this organism, and he hopes to produce an antitoxic serum by injecting the endotoxin, getting, he believes, better results than formerly with the use of a vaccine.

Graham, of Philadelphia, reports twenty-four cases of whooping-cough treated with injections of the Bordet and Gay bacillus, forty million being given every fourth day. All of these cases were in private practice, and those who saw them, parents and physicians, were of the opinion that they were modified by treatment; the paroxysms of coughing became less violent and quite often without vomiting; the cyanosis was less marked, and sleep was comparatively uninterrupted. The number of injections varied from six to eight in each case, the site being in the interscapular region.

TYPHOID FEVER.

By R. T. AKERS, M. D., Alum Ridge, Va.

I have read with much interest Dr. R. L. Raiford's remarks on Typhoid Fever, published in the *Semi-Monthly* of November 24, 1911. I heard this, as well as the other papers and the discussion that followed, when read before the Medical Society of Virginia in Richmond, and became intensely interested in all that was said.

Being located in a section where typhoid fever is more or less prevalent each year, the writer has given it more than ordinary study, and everything to which I have access, written or spoken on the subject, as well as each case coming under my observation, is carefully studied. I shall not take time or space to write of the pathology, symptoms and diagnosis, but the treatment which is of the greatest interest to both physician and patient.

Twenty-five years ago when I was called to see a case of typhoid fever, if I had quinine, tincture of iodine, carbolic acid and a bottle of turpentine, I felt pretty safe. A little later came the coal-tar preparations and then acetozone, and I might go on to name many more, but it is not necessary on account of their familiarity. For twenty years I treated the disease with the above and other drugs, as in my judgment were indicated, with varying success, and if you will allow the expression—unsuccess.

Five years ago I adopted a line of treatment that has given me entire satisfaction, and it is this treatment that has prompted the writing of

this short article. I can give it in no better way than to report a case that came under my care last July.

A young man about 20 years of age was indisposed for ten days or two weeks and was compelled to take his bed. I saw him four days later and found symptoms as follows: Pulse, 108; temperature, 105.2; heavily coated and dry tongue, abdominal distention with slight tenderness over Peyer's patches and constipated bowels.

Treatment.—Five grains each of calomel and bicarbonate of soda divided into five doses; dose every hour, followed in four hours after last dose with Epsom salts; this was to be repeated, if necessary, until a thorough evacuation of the bowels occurred. Ordered a tepid sponge bath to be given for twenty minutes and repeated every four hours until the temperature dropped to 102, and then only when necessary to hold the fever below that point. After the bowel movements, 1-30 grain of corrosive sublimate, dissolved in a glass of water, was given every four hours, and this, with an occasional dose of castor oil, constituted the entire medical treatment.

I ordered as a diet the whites of two raw eggs mixed with water and flavored with lemon every four hours, this being alternated with a glass of fresh buttermilk. Directions were also given to drink water freely.

By the third day temperature had been reduced to 101, and did not rise above that point throughout the attack. The tongue cleaned and became moist by the fifth day, while tympany and tenderness subsided. Temperature became normal on the seventeenth day. On the twenty-third day he sat up and from that time regained strength and flesh rapidly.

My experience with the treatment as outlined in this case is that we have less complications than any other I have used. Had complications arisen, remedies appropriate for the condition would have been given. In no case do I give acetanilid as a medicine, nor sweet milk as a diet.

Proceedings of Societies, Etc.

NORFOLK COUNTY MEDICAL SOCIETY— SURGICAL SECTION.

Reported by FRANK H. HANCOCK, M. D.

The subject of discussion for the January, 1912, meeting was the paper* by Dr. Jos. T.

Buxton, of Newport News, Va., on

Surgical Conditions of Childhood.

Dr. Kirkland Ruffin, discussing acute abdominal conditions in children, said that the profession was just now awakening to the importance of keeping all food, water and cathartics out of the stomach until the trouble had definitely manifested itself; that it was of more importance still to educate the mothers that young children, seized with acute abdominal pain, and vomiting, *must not* be given castor oil and calomel, nor anything of any description by mouth; that the unsatisfactory results that have been obtained in the abdominal surgery of children have been due in no small degree to the enhancement of the intestinal distress by this particular ignorance of food or cathartic administration.

In volvulus, in intussusception, in obstruction, in perforation, in acute appendicitis, nature's whole plan in reversing peristalsis and throwing intestinal contents into the stomach to be gotten rid of by emesis, in closing the ileocecal valve or the pylorus, is to shut off and stop the flow of intestinal contents through inflamed and irritated intestines, corresponding with the contraction of muscles around inflamed joints, for splint purposes, or the closure of the eyelids in conjunctivitis. Any interference upon our part with that life-saving plan is as sinful as would be the deference of surgical intervention for purposes of laying on of hands, or the practice of other fetichism in acute inflammatory conditions, since it is evident this practice bears no relation to the circumstances of the case and that it is a clear contravention of the only device whereby life may be preserved during the course of an acute attack. Its wide prevalence is to be deplored, and must be combated; it is a survival of the practice of the Dark Ages, whose shadows are still upon us in many places.

The early recognition of this vital truth upon the part of Ochsner, his insistence upon it, his putting it into practice, is what has more than anything else entitled him to the grateful regard of his fellow-man. Dr. Ruffin believed that in ten years it will be regarded as a criminal proceeding to put a particle of food or cathartic into a child's stomach during one of these acute abdominal seizures.

Dr. Wm. L. Harris reported a case of intussusception in a child four months old, where the operation was performed only eight hours after the onset of symptoms, but that death ensued twelve hours later. In this case the child was taken with paroxysms of abdominal pain, nausea and vomiting, about six o'clock in the morning. The mother gave it castoria freely; by ten o'clock the pain was worse, and a doctor was called, who gave more purgatives, making no examination of the abdomen. About one o'clock, Dr. Harris saw the case, witnessed the violent intestinal contractions, the meteorism, distressed look, quick pulse, and respiration, and then with his finger in the rectum discovered the sausage-shaped mass, which is so often found, and is so characteristic of intussusception. The napkins were discolored by blood-stained mucus stools. The child was at once placed upon the operating table, where an invagination-ileo-colica (Lorenz) was seen, whose apex reached clear to the sigmoid flexure, against which it was impinging. This long invagination was easily reduced by Ochsner's method of pressing upon the outer surface of the intussusciptens just beyond the point to which the intussusceptum reached, freeing the entire gut.

The speaker described a second case recently seen by him where a child of eleven months was taken with colicky abdominal pain, crying and drawing thighs over the abdomen. Purgatives were given by the mother but the bowels did not move, only a little mucus passed. Then enemas were given, and finally a doctor prescribed more calomel. This child was seen by the reporter about one o'clock in the day; it was well-nourished, healthy looking, with well-formed body; lungs and heart were normal. Every few minutes there were violent paroxysms of pain over the abdomen, lasting about two minutes. Some blood-stained mucus was now passing from the rectum. A finger inserted there readily palpated the sausage-like shaped mass. The abdomen was immediately opened, and an ileocolic invagination found and reduced. However, the child died a few hours later.

Dr. Harris believed that both of these cases should have been saved, and believes it a great blight upon the profession that doctors should deliberately thwart the only plan in the world by which babies with strangulated bowels can be saved from irreparable intestinal damage pending relief upon the operating table. He

*For paper, see page 526.

referred to the fact that children are afflicted with this malady to an extraordinary extent, and said it was due to these anatomical facts: the diameter of the colon at birth is only a few millimeters greater than that of the small intestine, and before birth their diameters are almost equal, but that afterwards the colon rapidly enlarges until, at about the fifth year, it has become three or four times as wide as the ileum. Even during the first month the disproportion between these two, notwithstanding the similarity of their embryologic origin, becomes marked, and Power thinks the ileo-cecal valve is less competent during this period, making intussusception easily possible. Power made extensive investigations in the ileo-cecal region, and we are indebted to him for the above facts, as also for the knowledge of a further anatomical reason for the occurrence of intussusception in the very young, that the mesentery is of much greater length in the nursing child than in the older, giving the bowel a correspondingly greater range of mobility.

Dr. Gwathmey said that the diagnostic points of value in intussusception were (1) the mother's story, (2) paroxysms of shock and abdominal pain, (3) early discovery of blood-stained mucus, (4) finding of a mass, usually sausage-like, in the right abdominal cavity upon palpation through the rectum.

Pending this diagnosis, not only should there be a strict prohibition of cathartics, but gastric lavage should be practiced to assist in removing from the alimentary tract the intestinal contents that have been thrown into the stomach by reversed peristalsis for this very purpose of ejection. If there is any delay in diagnosis, or operation, the stomach should be washed out two or three times on account of the reaccumulation there of discharged bowel contents.

The cases that get well are usually the ones that reach the operating table in the first twenty-four hours; after that points of gangrene and areas of abrasion will surely be seen, and still later the mass of the intussusceptum will be gangrenous.

It is scarcely to be doubted that the treatment administered to the two cases Dr. Harris saw, unfortunately too late, hurried them to the irretrievable condition that brought on their early deaths.

Dr. Gwathmey recalled an interesting conversation last Summer in London with Mr.

Clubbe, of Sydney, Australia, in regard to this surgical subject, in which that surgeon had said that there was no chance for life except in the earliest diagnosis, and operation—that it was surgical from the outset.

Apart from his own skill, Mr. Clubbe has succeeded, it seems, in educating his medical community to an early recognition of this most acutely fatal malady of early childhood, which Dr. Gwathmey regarded as a great service in itself, because operation as a primary measure is the only hope. Of 144 cases reported in a monograph, Mr. Clubbe found *only fourteen over a year old*, a striking instance of the predilection of intussusception for very young children; of these, 124 were treated by laparotomy with 84 cures, a mortality of less than one-third.

Dr. Gwathmey believes with W. L. Wallace, of Syracuse, that if autopsies could be obtained, intussusception would be found to be a frequent cause of death in infants and young children, who die after a few days illness with acute intestinal disturbances.

The speaker cited a case of spontaneous elimination of the intussusceptum in a child where the bowel again became atent, as was shown by normal fecal movements. The child was doing well at the end of a week, following the expulsion of a large area of gut which included the ileo-cecal valve, when an irresolute mother, yielding to childish importunities, gave an unusually heavy meal, which strained the new adhesions of peritoneal and bowel surfaces, and the tender union gave away, followed by immediate prostration and death.

Section adjourned.

Analyses, Selections, Etc.

Experience with Albumin Milk.

Jules M. Brady, St. Louis, says he has administered this food to twenty infants, eighteen having nutritional disorders; and two, diarrhea. There were favorable results in seventeen. The classification of the nutritive disturbances for which this food is indicated is as follows: (Finkelstein), dyspepsia, decomposition, intoxication, parenteral infection.

To prepare the milk one tablespoonful of essence of pepsin, or a rennet tablet, is added to

a quart of milk which is warmed to 100° F. After fifteen minutes the milk is well curdled and the whey is poured off. The curds are placed in a muslin bag and allowed to drip two hours. They are then gently mashed through a hair sieve, twelve to fifteen times; at the same time one pint of boiled water is poured through the sieve and one pint of buttermilk is added. As recently emphasized by Brenemann, first boiling the milk facilitates the passage of the curd through the sieve. After the inoculated milk has stood twenty-four hours it is churned or simply beaten with an egg-beater, and is then ready for the addition of carbohydrates. Maltose is preferred, and may be added up to 7 per cent.; if this does not produce increase of weight, particularly if the baby is over three months old, two per cent. of flour is also added, first cooking for twenty minutes with a little water.

The composition of albumin milk is proteid, 3 per cent.; fat, 2.5 per cent.; mineral salts, 0.4 per cent.; carbohydrates, lactose, 1.5 per cent.; plus the percentage of maltose and flour added. On standing, a sediment forms, but the mixture becomes homogeneous when agitated. It has an unpleasant sweetish-bitter taste, but young infants take it well, though for older ones it is frequently necessary to add one grain of saccharin to each quart.

Regarding the amount to be fed, Finkelstein advises a gradual increase from 10 ounces in twenty-four hours, up to 7 to 8 ounces to each 2.2 pounds of the baby's weight. Not more than a quart a day, however, is to be fed. In malnutrition, malt-sugar is added at once and increased up to 7 per cent. if necessary. In diarrhea in the beginning, Finkelstein orders small amounts, 2 or 3 ounces the first day, gradually increasing, and gradually adding the sugar after from four to six days. This must be preceded by a tea-diet for from twelve to twenty-four hours. Great care must be taken to add sugar fast enough so as not to endanger the baby from inanition. The addition of the proper amount of carbohydrates is one of the most important steps in the successful feeding of albumin milk. After two or three months of its administration, the infant can be returned to the usual mixtures.

As to the rationale and the methods by which good results are obtained, it is noticed that an effort is made to have the milk-sugar as low as possible, as this is regarded as the offending

element, giving rise to fermentation in the bowels. Therefore, the whey which contains the lactose is removed as much as possible; the buttermilk also contains a low lactose percentage. An average per cent. of fat (2.5) is fed as the fat itself only takes part secondarily in the acid fermentation if the fermentation of the milk-sugar already has begun. The high proteid diet counteracts fermentative changes, and allows a very high carbohydrate percentage to be fed. Clinical results seem to prove the incorrectness of the belief that high proteid feeding injures the organism by the excessive demand made on the metabolism of the infant, particularly the kidneys. It appears that the reason that we can cause a gain of weight so rapidly in the run-down infant is because so large a carbohydrate percentage can be incorporated in the mixture without causing an intoxication. The prevention of development of the latter is due to the high percentage of proteid and low percentage of lactose and mineral salts. Some of the mixtures would yield a total carbohydrate percentage of nine. Malt-sugar is selected as being the easiest absorbed and best tolerated by the infant's organism.—(*Journal A. M. A.*, December 16, 1911.)

Differential Diagnosis of Cases With Affections Apt to be Mistaken for Cerebral Tumor.

Williams, Washington, is of the opinion that the most usual error is to diagnose hysteria when peculiar behavior occurs on account of tumor of the brain. Inversion of blue and red color fields means increased intracranial tension; and the text-books err in attributing it to hysteria, a term now to be confined to a syndrome produced by suggestion, *i. e.*, a psychogenic disorder. Hence, the trophic diseases have some other cause and are often simulated. Toxemia is not hysteria, though it may favor suggestibility. A case of real tumor (Dr. Barnes') where a paralysis of an arm was rapidly removed under suggestion is reported to show how tumor may be diagnosed despite its accompanying hysteria.

To distinguish gummatous meningitis from neoplasm is sometimes impossible, clinically, but the laboratory affords aid here. A case of uncinat gyrus syndrome is related in which potassium iodide removed the symptoms.

Vascular disorders may clinically resemble neoplasm very closely, as in a case of complete right recurrent hemiplegia and hemihyperesthesia with aphasia, which ceased entirely after appendectomy. Although Babinski's toe sign did not occur, yet the type of facial paralysis and the combined flexion sign and that of the contralateral synergic responses precluded a diagnosis of hysteria.

Cerebral tumor due to nephritis, with only slight albuminuria, furnishes a thorny diagnosis in some cases. One is cited where phenol sulphonaphthalein showed only 40 per cent. returned in the urine in two hours, which helped to clinch a diagnosis hitherto not quite certain owing to facial paralysis and vertigo of definite character.

Serous meningitis affords another difficulty which the author makes no attempt to discuss.—(*Archives of Diagnosis*, October, 1911.)

Neurologic Diagnosis—Some First Principles.

Hansell Crenshaw, Atlanta, says that first and fundamental in the diagnosis of any nervous disease should be the determination of whether the disorder is organic functional or both. However unsatisfactory this division may be, it is of prime importance to the diagnostician. It is, perhaps, best to assume every case to be organic until a searching investigation negatives the assumption. Not only may hysteria and neurasthenia simulate organic disease closely, but oftentimes they coexist with organic diseases. The unwary diagnostician observing the obvious stigmata and accidents of hysteria, for example, in a mixed case, is very likely to overlook the existence of the accompanying organic disease altogether.

Crenshaw briefly summarizes the signs of organic disease thus:

1. Localized convulsions are always caused by a corresponding irritation in the cerebral cortex—an irritation almost invariably due to organic disease.

2. Either spastic or tonic stiffening of the lower limbs is of organic origin if, when the examiner lifts one of the patient's feet, the pelvis and other leg are raised from the bed. This condition is called spinal epilepsy.

3. A persistent ankle-clonus, the vibrations of which are more than five per second and of uniform rate, is highly indicative of organic dis-

ease. But a slow, irregular, transitory clonus may be hysterical.

4. Actual absence of the knee-jerk is almost proof positive of organic disease of either the nervous system or the muscles involved. Very rarely, however, it is met with in health and, we are told, it has been successfully simulated.

5. Atrophy of muscles accompanied by absence of faradic irritability is either the result of organic nervous disease or of idiopathic disease of the muscles.

6. Paralysis affecting only the muscles supplied by the nerves from a given spinal segment is of organic origin regardless of whether there is corresponding sensory loss or not. And both the so-called mowing gait and steppage gait are indicative of degeneration.

7. As is well known, permanent paralysis of the sphincters is always a certain sign of organic disease; and absence of control of the bladder and rectum is generally organic in origin.

8. Unilateral paralysis of the laryngeal muscles is certainly organic, though bilateral laryngeal paralysis may be functional.

9. Paralysis of the palate is generally an indication of organic disease, particularly oncoming diphtheritic paralysis.

10. Unless caused by uremia, paralysis of the face may be said to be always the result of organic disease.

11. Hemianopia, if clearly defined and permanent, is always organic, while either optic atrophy or optic neuritis is obviously an organic nervous disease. Although inequality in the size of the pupils should lead us to suspect organic brain lesions, this condition may occur in traumatic neurasthenia and other functional neuroses. The Argyll-Robinson pupil, however, is absolute proof of degeneration of the brain. Paralysis of the extrinsic muscles of the eyeball is due to organic brain disease when not the result of local conditions in the orbit, except those cases in which the paralysis is limited to the voluntary conjugate movements of both eyes.

It has been pointed out by Pershing that the absence of positive signs of organic disease does not always warrant one in assuming that the condition is functional. If, however, the signs do not appear after a considerable period, say two or three months, the exclusion of an organic basis for the trouble may reasonably be made.

By considering the onset, one may be able to gain an insight into the nature of the case.

Roughly speaking, those with an onset varying from a few minutes to a few hours are vascular, that is, either hemorrhagic, embolic or thrombotic. Cases developing within a few hours or a few days are either slow vascular lesions or rapid inflammations. Cases developing in a week or so are inflammations or rapid growths. Cases requiring from six weeks to six months in which to develop are either very slow chronic inflammations, growths of moderate rate of growth or rapid degenerations. Cases with an onset longer than six months are always either degeneration or a growth of slow development.

The classification of functional neuroses resolves itself largely into a question of whether the case is one of hysteria, neurasthenia or hypochondria. Whether Janet's subdivision of the neurosis of exhaustion into the more or less acquired neurasthenia proper and the more or less inherited psychasthenia is an advantageous complication of the classification set forth or not, the author is doubtful. But he is of the opinion that we often neglect to draw the valuable distinction between neurasthenia proper and hypochondria. In typical neurasthenia the mind of the patient is mainly obsessed with imaginary dangers from without, while the mind of the classical hypochondriac is obsessed with imaginary dangers from within. Moreover, the neurasthenic is weak from exhaustion, while the hypochondriac is often well-nourished and even robust.

It should be emphasized that perhaps most cases of functional nervous disease are mixed with other functional neuroses, and that it is always possible for the functional ailments to become grafted upon organic maladies in a manner truly calculated to mislead the long-suffering diagnostician.—(*Journal-Record of Medicine*, January, 1912.)

A Method of Treatment of Empyema in Young Children.

James H. Kenyon, New York, reports good results following his method of treating empyema in young infants. He opens the pleural cavity along the aspirating needle, making an opening so small that it will just permit the introduction of a rubber drainage tube, so inserted as to let as little pus as possible escape. This tube is a long one and is connected with a bottle of warm saline fluid so arranged that

the fluid is aspirated into the chest, and dilutes the pus. The operation is very simple and quick, and is not accompanied by shock. The apparatus causes no discomfort to the child, and the escape of the pus is slow and does not cause a pneumothorax. There is little leakage around the tube and mixed infection is avoided. Convalescence is shorter than usual, and drainage is efficient.—(*Medical Record*, October 21, 1911.)

Book Notices.

Health Hints and Health Talks. By E. R. PRITCHARD, Secretary of the Chicago Department of Health. 12mo. 153 pages. The Reilly & Britton Co., Chicago. 1911. Cloth. Price, 50c. net.

"Health Hints" were originally published in newspaper form as part of the education and publicity work of the Chicago Department of Health, which fact alone is sufficient endorsement with any one who has followed the work of that Board. These "Hints" and "Talks" are exceedingly practical, and the language used is so simple that the book, if placed in each household, should aid materially in spreading the gospel of right living and good health.

Treatise on Diagnostic Methods of Examination. By PROF. DR. HERMANN SAHLI, Director of the Medical Clinic, University of Bern. Edited, with additions, by NATHANIEL BOWDITCH POTTER, M. D., Assistant Professor of Clinical Medicine, College of Physicians and Surgeons, New York. Second edition, revised. Authorized translation from the fifth revised and enlarged German edition. 8vo. 1,229 pages, containing 472 illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$6.50 net; Half Morocco, \$8 net.

This is an exhaustive treatise on diagnostic methods, and but little that would be expected in a book of this character will be found wanting. Descriptions are good, with a style that is easy and attractive, while the illustrations, drawings and graphic expressions are numerous and helpful. The subject matter is extended so as to include, among other things, examination—general and special—of the nervous system, examination of the larynx, trachea, and bronchi, rhinoscopy, ophthalmoscopy, etc. We find little to criticise—much to commend.

Editorial.

Symptomatology of Gall-Stones.

Post-mortem examinations made by pathologists of all patients dying in large hospitals and the examination of the upper abdomen by surgeons as a routine measure in abdominal sections has shown the presence of gall-stones in many cases where they were not suspected to exist. It is stated by several reliable authorities that about one person in ten has gall-stones. If this be true, the condition should constantly be borne in mind when examining a patient with abdominal trouble and both physician and surgeon should make a thorough study of the symptomatology of the disease in order that he may recognize it early and treat it properly.

It sounds like a paradox, but it is a deplorable fact that most cases of gall-stones are treated by the physician for indigestion, and that many cases of supposed gall-stones operated on by surgeons are the victims of some other disease. Mistakes in the diagnosis of gall-stones are due to all the early symptoms being referred to the stomach and the supposedly pathognomonic symptom of jaundice most frequently due to cancer.

Indigestion is the earliest and most frequent symptom of gall-stones. It is not produced by imprudence in eating, comes on without definite relation to taking food, and is usually relieved by vomiting. Persistent and intractable indigestion that does not yield to treatment is usually due to some organic lesion in the abdomen, such as appendicitis, ulcer or gall-stones.

Pain located in the epigastrium and radiating to the back is another fairly constant symptom. It is dull aching in character and varies in intensity. It is increased when the gall-bladder is distended and relieved when it is emptied.

Tenderness over the gall-bladder can generally be elicited by spreading the fingers of the left hand over the patient's ribs and hooking the thumb under the costal margin. When the patient takes a deep inspiration, the diaphragm forces the liver down and the sensitive gall-bladder coming in contact with the examiner's finger causes a sudden catch in the patient's breath.

Colic is a familiar symptom. It is due to

the sudden blockage of the duct and the muscular contraction of the gall-bladder to overcome the obstruction. Colic is abrupt in its onset and sudden in its relief. The patient is doubled up in agony, he is white and cold yet sweats. There is faintness, nausea and vomiting.

Jaundice is not a very frequent symptom of gall-stones. Murphy states it only occurs once in seven cases. It is due to obstruction of the common duct, which may be due to its being plugged by a stone from within, but also may be due to its being compressed by a growth from without. It is a fact which cannot be too strongly impressed that most cases of gall-stones are not attended by jaundice, and most cases of jaundice are not due to gall-stones.

Fever is a frequent symptom of gall-stone disease, due to an increase in the acuteness of infection. It is marked by its rapid rise and abrupt termination. If the range of temperature be charted, it gives an appearance which Moynihan calls the "The Steeple Chart," and Murphy terms, "The Temperature Angle of Cholangic Infection."

Tumor or a movable pear-shaped mass which can be palpated in the region of the gall-bladder indicates either obstruction of the cystic duct with a stone and distention of the viscus with mucus, or the obstruction of the common duct by cancer and the distention of the organ with bile.

The symptoms of gall-stones have been hurriedly and imperfectly reviewed in an effort to interest the reader in the subject. Gall-stones are never innocent. They may be quiescent for years, but sooner or later they will give trouble. Gall-stones always cause symptoms. The reason a diagnosis is not made is because the symptoms are misinterpreted.

S. McG.

Tri-State Medical Society of the Carolinas and Virginia.

The Preliminary Program of the fourteenth annual session to be held in Columbia, S. C., February 21-22, 1912, shows over eighty papers on a vast variety of subjects, and the secretary informs us that a large number of titles have been received since the program went to press. Dr. A. B. Knowlton will tender the members and guests a reception at his home on Wednesday evening, and a "smoker" will be

given by the Columbia Medical Society at the Metropolitan Club, on Thursday evening. It is sure to be the banner meeting of the Society, as Drs. Way and Hughes, the president and secretary, have one or both been officers and especially interested in the Society for ten of the fourteen years of its existence.

A list of four hotels is given with instructions that reservations should be made as early as possible, as accommodations are somewhat limited at this time. The meetings will be held in the Assembly Hall of the Manson Building, beginning at 10 A. M., on Wednesday, the 21st.

The *Transactions* of the last session, recently received, are attractive in every detail.

Medical Examining Board of Virginia Endorsed by Osteopaths.

Owing to the present discussion in the General Assembly of Virginia, regarding the passage of bills proposed to govern the various methods of treating disease, injury and deformity, as taught by the reform schools, and believing that public health is best safe-guarded by stringent laws calling for high educational standards and efficient training in the fundamental essentials of medicine, for the old and reform schools of medicine and healing, and finding the State Board of Medical Examiners to be impartial in the execution of its functions, the Virginia Osteopathic Association, at its meeting in January, placed itself on record as being "opposed to the establishment of separate boards for the various reform schools, and thoroughly in favor of the present law compelling all applicants for licensure, of whatever school, to pass the State Board of Medicine, with the exemption of Materia Medica and Therapeutics for schools practicing drugless healing."

The above is the gist of a set of resolutions sent us for publication by the newly-elected president of the Virginia Osteopathic Association, Dr. J. Meek Wolfe, of Lynchburg.

Richmond to Have a Juvenile Court.

The large number of people interested in children's welfare and the correction of juvenile delinquents will be glad to know that this city is shortly to have a juvenile court. The rooms for the court are now being fitted up with a view to having the trials of these

miscreants private and as dissimilar as possible from scenes in the regular court-room. The new court purposes not only to pass judgment upon these youthful prisoners, but also to inquire into their home conditions, and as far as possible to correct the source of the trouble.

Similar courts have been opened up in a number of the larger cities, and it is believed that far greater good is accomplished by keeping this class in some home or reformatory and having them tried in such courts as these, than by placing them in jail with, in many cases, hardened criminals.

Danville (Va.) General Hospital to be Enlarged.

The week's campaign, recently undertaken in Danville, to raise \$15,000 for additions to the General Hospital, ended most successfully, \$500 being over-subscribed. It is the purpose of the directors of the hospital to expend the money in building an addition to the Hospital, which may be used as a Nurses' Home and for wards.

New Hospital for Hampton, Va.

The building committee of the Dixie Hospital and Hampton Training School for Nurses has just awarded the contract for a splendid new hospital to be built on the site of the former home of President Tyler in that place.

The American Hospital Association

Will hold its fourteenth annual conference in Detroit, Mich., September 24-27, 1912, under the presidency of Dr. Henry M. Hurd, of Baltimore. Dr. J. N. E. Brown, Toronto, Canada, is secretary. The membership of the association is composed of hospital trustees and managers, and trustees, contributors and officers of associations founded in the interest of organized medical charities. It is the desire of the association to establish a sort of central bureau of hospital information, from which may be disseminated, upon request, information pertaining to all phases of hospital work and life. It invites representatives and supporters of small or large hospitals to become members. Application forms for membership and a leaflet giving detailed information may be had upon request of the secretary.

Dr. Louis J. Picot

Has been elected Superintendent of the North Carolina State Hospital for Insane, at Raleigh, to succeed the late Dr. James McKee. Dr. Picot has for the past four years been an assistant at the hospital, prior to which time he had served for a number of years as a member of the board of directors.

New Editor for Memphis Medical Monthly.

On account of the increased number of demands made upon his time by other duties, Dr. Eugene Rosamond has recently retired as editor of the *Memphis Medical Monthly*. His place has been filled by Dr. J. L. Andrews, who is well-known throughout that section of the country as an educator and for his work in health matters.

The Interstate Medical Journal .

Will publish another of its Symposium Numbers in March, 1912, the subject this time being "Diseases of the Digestive Tract.

Physicians Needed for New York State Hospitals.

The New York State Civil Service Commission, Albany, N. Y., announces an examination on February 24, 1912, for the position of junior physician in the State Hospital Service, which comprises eighteen hospitals. The salary is \$900 and maintenance, increasing by \$100 a year to a maximum of \$1,200 and maintenance, after which advancement is made upon promotion examination up to the position of superintendent, at \$3,500 to \$4,500 a year. If interested, write at once to the above address for application blank and full information. It is possible that the examination will be held in several different cities throughout the United States upon the same day.

Colored People's Tuberculosis Day.

Lincoln's Birthday, February the twelfth, will be observed in the colored schools of eighteen counties of this State as Tuberculosis Day, when special instruction will be given through the Tuberculosis Catechism, issued by the State Health Department and State Anti-Tuberculosis Association. It is hoped that this, the beginning of a State-wide campaign to instruct the colored people of the State, will be the means of helping many who would not otherwise be reached.

The National Confederation of State Medical Examining and Licensing Boards

Will hold its twenty-second annual convention at the Congress Hotel Chicago, Ill., Thursday, February 29, 1912, under the presidency of Dr. Charles A. Tuttle, of New Haven, Conn. Dr. George H. Matson, Columbus, O., is secretary-treasurer.

An interesting set of papers will be read at the morning session and the afternoon will be given up to discussion of the reorganization of the Association.

The Association Internationale de Perfectionnement Scientifique

Will hold its ninth annual congress, under the patronage of the French Government, August 3-31, 1912, in the Balkans, in Turkey, and in Greece. It will be opened in Evian-les-Bains or Thonon-les-Bains (lac de Genevo), and, after being continued in a number of places, will have its last meeting at Aix-les-Bains. Colleagues desiring to present notices or reports, or wishing further particulars, should write, enclosing international answer stamp of 2½d. to the President, Head Office A. P. M., 12 Rue Francois-Millet, Paris XVI.

Obituary Record.

Dr. Arthur M. Walkup,

For many years a prominent physician of Botetourt County, Va., died at his home at Gala, January 31st, following a stroke of paralysis. He had been in bad health for several years, having previously suffered a stroke on his left side. He was a graduate of the College of Physicians and Surgeons of Baltimore, in 1880, and had been a member of the Medical Society of Virginia since 1891.

Dr. Lewis P. Bailey

Died at Scottsburg, Va., January 20th, aged 73 years. He studied medicine at Jefferson Medical College, Philadelphia. After serving as a surgeon in the Confederate service, he took up the practice of his profession in Halifax County, from which he retired several years ago.

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NECESSITY FOR MILK AND MEAT INSPECTION.*

By LOUIS A. KLEIN, D. V. M., Philadelphia, Penn.
Dean of School of Veterinary Medicine, University of
Pennsylvania.

To discuss milk and meat inspection comprehensively, even with the briefest details possible, would require more time than is at my disposal. Therefore, I have decided to confine my efforts to the presentation of the conditions that render milk and meat inspection necessary, and of public importance.

In adopting the milk of the cow as an article of food man has created conditions and requirements not provided for by nature. The cow is admirably adapted to supplying nourishment to the calf at its side. The milk passes directly from the udder of the cow to the stomach of the calf, without opportunity for contamination or decomposition, if the cow is healthy. But when the milk is drawn from the udder by man and used for the nourishment of human beings more or less distant from the cow the conditions are radically different. The milk is drawn into a pail held under the body of a cow in a stable, opportunity being thus afforded for material discharged from the cow, or falling from its body, or floating in the air of stable, to get into the milk. Then, it is transferred to several other vessels and handled by several individuals before it reaches the consumer, and usually there is a considerable interval of time between its production and use.

It will be seen at once that certain precautions are necessary if the consumer is to receive a wholesome article of food. Even the calf suffers when nature's method is interfered with and proper care is not observed in feeding

*Read by invitation before the Seaboard Medical Association of Virginia and North Carolina, at Newport News, Va., December 5-7, 1911.

the animal, although it may be kept close by the cow. On large dairy farms it is customary to permit the calf to suckle the cow only during the first day or two after birth, the calf being fed milk from a bucket or a self-feeder after that time. Unless the milk is fed fresh and in scrupulously clean vessels the calf frequently suffers from an acute catarrh of the stomach and intestines in consequence of the presence of decomposition products in the milk, and if the cause is not removed death may result. A disease of a similar character, and resulting from a similar cause, is the diarrhea and enteritis of young infants, which, in large cities, causes five to twenty per cent. of the total deaths from all causes. In the case of the infants, however, there is a longer period for the milk to undergo decomposition. Moreover, forcing the cow to high milk production, together with the more or less artificial conditions under which the animal must be kept, has somewhat reduced the natural resistance of the cow to disease, especially to conditions and affections of the udder and the other genital organs, and of the digestive apparatus, the parts more active in milk production; thus rendering it necessary to be on the lookout for the appearance of diseased conditions in the dairy cow, and also to mitigate as much as possible the artificial conditions to which the animal must be subjected. Sunlight and fresh air in the stable, with judicious exercise in the open air, are of considerable value in this connection. "Every farmer loses more in ten years * * * by having unsanitary stables than what it would cost to have made them efficient."—(*Hoard's Dairymen*, p. 1254, Nov. 10, 1911.)

From the time of production to delivery to the consumer, milk is exposed to contamination and subject to decomposition.

If the udder is affected with a bacterial disease the milk will contain the disease-producing organisms when it is drawn. If the disease is

located in other parts of the body bacteria may be thrown off in the manure, in the urine, or by coughing, and may get into the milk after it is drawn from the udder. Some of these organisms are capable of producing the same disease in man as in the cow; others will not produce the same disease, but will irritate the gastro-intestinal tract or bring about decomposition changes in the milk accompanied by the production of substances which will have an irritant action. Furthermore, abnormal substances produced in the body of the cow by disease may be eliminated in the milk, especially when the other channels of elimination are not operating normally. Some of these substances render the milk irritant. In this connection a case that recently occurred near Philadelphia may be cited. Two children receiving the milk from a certain cow developed a low, intermittent fever, refused to eat but a small quantity of food and were constantly cross and fretful. An examination of the cow showed that the animal was affected with catarrh of the gastro-intestinal tract. Laboratory examination of the milk indicated that abnormal material was being excreted through the udder, passing out in the milk. The milk was withheld from the children; in four days they began to improve perceptibly, and in fourteen days were in good health. No medicinal treatment was given. All of these possibilities can be avoided by using only healthy cows for milk production. This requisite cannot be assured, however, by merely an annual tuberculin test of the herd, as is so often assumed.

Particles of manure from the flanks and udder of the cow and hair and scurf from the skin may fall into the pail while the cow is being milked. If the dry fodder is put into the manger before or during milking, the dust from the fodder will be distributed in the air of the stable and some of it will fall into the milk pail and also into the milk can, if the latter is kept in the barn. If the stable is dirty, or if it is cleaned shortly before milking, additional dust will be carried about in the air, and odors will also arise which will be absorbed by the milk. If the milker has been previously engaged in hauling manure, or cleaning horses, or similar work about the farm, dirt may be added to the milk from his clothing or hands, especially if he has not washed the latter before beginning to milk. Much of this filth can be removed by

the use of a strainer, but only the gross particles or visible dirt can be taken out of the milk in this way. The most harmful part of the material, the bacteria that are always contained in it, will pass through the strainer, together with the dissolved dirt, and remain in the milk. These bacteria will grow and multiply rapidly, using up the nutritive substances of the milk for their nourishment and discharging the waste matter of their bodies into the milk, and by so doing bring about decomposition and putrefaction, with the production of substances that are injurious to the milk consumer. The degree of the intensity of these changes will depend upon the extent of the original contamination, the time elapsing before the milk is delivered to the consumer, and the temperature at which it is kept in the meantime.

A great portion of this dirt, and therefore much of the accompanying bacterial contamination, can be avoided by a decent regard for cleanliness and a few simple precautions. The stable of the dairy cow is not only a place where some of the crops grown on the farm are turned into a better form for the market, but it is also a place where human food is prepared, and should be treated accordingly. Brushing the cows will remove the greater part of the loose dirt, and if the udder is wiped with a clean, damp cloth immediately before milking, any loose particles remaining will adhere to the skin and not fall into the milk pail. The cows should be brushed and the stable cleaned a sufficient time before milking is begun to give the dust time to settle and the odors to be dissipated. The dry fodder should be fed after milking to keep the air as free from dust as possible during milking. The use of a milk pail with a covered top and a small opening is a very great help in keeping dirt out of milk. The withdrawal of the fore milk into a separate vessel before milking will also greatly assist in decreasing the number of bacteria. If the stable is well-lighted and well arranged, the floor and gutters of cement, and the stall divisions of iron pipe, cleanliness can be more easily attained. But these things are not necessary to the production of wholesome milk. They are merely labor-saving devices.

Keeping the cows clean and well-bedded and in clean quarters will require more labor than to keep them otherwise, but we have the testimony of successful men engaged in the dairy

business that cows kept in the condition necessary for the production of wholesome milk will give a greater yield of milk than when they are kept in uncomfortable filthy stables. C. L. Peck of Pennsylvania, in discussing the productiveness of dairy herds in his section (Hoard's Dairyman, page 498, 5-5-11), said, "I never knew of a herd giving 300 pounds or more unless card and brush were used and liberal bedding provided. In the Northern part of Pennsylvania and the Southern part of New York not 3 per cent. of the herds ever see card and brush and not 3 per cent. ever reach 6,000 pounds of milk or 300 pounds of butter fat per year." F. H. Schribner of Rosendale, Wis., in reporting the Neenah cow census (Hoard's Dairyman, Page 493, 5-5-11) said that of the forty-four herds in the census the six above the 250 pound butter fat mark, "kept their cows in a comfortable barn, well-lighted and ventilated; they looked well to the comfort of the cow and believed it an important factor in milk production." H. N. Camp of Tennessee writes as follows: (Hoard's Dairyman, Page 286, 3-24-11): "I have thirteen cows and after reading an article about currying cows and making my dairyman read the article, in which he did not believe, I induced him to try currying my cows. In one week's time he gained thirteen pounds of butter." Keeping the cows, and especially the udders clean also helps to protect them against udder diseases, which is quite a serious loss to dairymen.

When the milk vessels are not properly cleaned the particles of milk and dirt that adhere to them become culture beds for bacteria, and milk placed in such vessels will have a high bacterial content and will sour early. It is not only necessary that the milk pails, the milk cooler and all other dairy utensils, together with the cans and bottles should be thoroughly cleaned with boiling water and soda, but it is also essential that the water should be from a source that is not liable to contamination. These utensils and vessels are rinsed with cold water after they have been scoured with hot water, and if the water contains disease-producing organisms they will find a favorable medium in which to grow when milk is placed in the vessels, and they will have time to multiply in great numbers before the milk is used by the consumer, especially if it is not kept cool. If the well, spring or stream from which the water is ob-

tained is receiving surface drainage or seepage, or if there is any open cesspool so located that there may be drainage or seepage into the water-well, spring or stream, any disease-producing organisms, such as the typhoid fever bacillus, that may be deposited in the cesspool with other material will eventually get into the water and infect the milk in the manner described above. Milk has also been contaminated during cooling by infected water through a leak in the cooler or by the entrance of water into the submerged can. Epidemics of typhoid fever transmitted by milk have been brought about in this way. Milk has also been infected with the bacillus of typhoid fever, the bacillus of diphtheria and the causative agent of scarlet fever by men and women handling milk who have been in contact with persons suffering with this disease or who have themselves just recovered from one of these diseases. Milk bottles from infected houses have also transmitted these diseases through the milk. Unfortunately, there is no practical method of milk examination by which we can assure ourselves that milk is free from the infectious agents of these diseases and consequently our efforts must be directed to preventing them from entering the milk.

The uses to which milk vessels are put are surprising, and sometimes revolting. In this connection the milk consumer is not always guiltless. A physician tells of a bed-ridden patient using a milk bottle to expectorate in. One inspector has seen the baby's clothing soaking in the milk pails. Milk pails have also been used to carry swill to the pigs. On one farm the milk cooler was washed in the children's bath tub. A milk dealer was found washing the milk bottles in the family wash tub.

When the milk is drawn from the cow it has about the temperature of the cow's blood—101.5° F. This temperature is very favorable to the growth of bacteria, and if the milk is not promptly cooled the bacteria which have entered it during milking will increase in numbers very rapidly. Milk has the property of inhibiting to a slight degree the growth of bacteria when they are not present in large numbers, but this property is not of sufficient force to be depended upon to prevent the increase of the bacteria originally contaminating the milk and the occurrence of decomposition, with the production of injurious products. To prevent bacterial growth and the attendant decomposition it is necessary to reduce

the temperature of the milk to at least 60° F. or below as soon as possible after milking, and to keep the milk at this temperature until it is used. This will require not only the attention of the producer, but also of the transportation companies, the retailer who delivers the milk, and the consumer.

The necessity for public control of the milk supply is greater to-day than ever before. In the old days where milk was furnished by the family cow of a neighbor, there was not the opportunity there is now in the larger dairies for the animal to become infected with disease, or for the milk to become contaminated, and it was used so shortly after its production that there was not much time for decomposition changes. These simple conditions still exist in rural communities. In a barn containing a single cow or two cows, every condition is more favorable to the receipt of wholesome milk by the consumer. The cow is not only less exposed to disease but is usually kept under better hygienic conditions and the cow, the stable, and the milk vessels are more easily kept clean, and there is less liability of infection being introduced by the attendants. Moreover, where a milk producer is supplying milk to his neighbors, the element of personal acquaintance, friendship or sympathy also enters into the matter, which is not the case where a dairyman is producing milk to be used by people in a distant city whom he does not know and has no interest in, and where the milk will also be handled by two or three other persons before its delivery to the consumer, and perhaps be mixed with the milk from several other farms. The larger the city the more distant the places of production and the longer the period between the drawing of the milk from the cow and its use by the consumer, and hence the greater the importance of having milk produced by healthy cows under cleanly conditions and properly cooled and cared for.

The question naturally arises, cannot those having to do with the production, transportation and care of milk be depended on to deliver wholesome milk to the consumer? Past experience and present conditions answer, No. It has already been pointed out that in the case of the milk supply of a large city the responsibility is divided and that the milk from any one farm may lose its identity by being mixed with the milk from other farms. Furthermore, one price is usually paid for milk in the city and the

dairyman who tries to produce a good article is forced to compete with the man who aims to produce milk as cheaply as possible. There is usually no standard of valuation except the price. These conditions are not encouraging to the conscientious dairyman who may desire to produce a good article. Wholesomeness, or quality in a hygienic sense, should be the standard for judging milk. This would encourage the man who is trying to produce good milk and would shut out of the market milk not produced and handled under proper conditions. Such a standard can only be applied by public supervision of the milk supply.

All efforts to insure a wholesome milk supply to a community should be directed to keeping milk with injurious properties out of the city, or to preventing it from acquiring such properties during storage or delivery, rather than to discovering unwholesome milk after it has reached the city. It is possible to discover some of the injurious properties of milk by examining a sample taken in the city, but while the sample is being examined the milk from which it was taken will under ordinary conditions have been consumed, and, furthermore, such contaminations as the specific causes of tuberculosis, typhoid fever, diphtheria and scarlet fever cannot be detected by practical laboratory methods. A pure milk supply can be insured only by the same methods as a pure water supply, that is, by cleaning and guarding the source. To insure real safety, therefore, the supervision must include the health of the cows, and the methods of feeding and caring for the same; the cleanliness of the stable, milk house and utensils; the method of milking, and of handling and caring for the milk; the character of the water supply, and the health and intelligence of the people who come in contact with the milk. In addition, laboratory examination of the product from time to time will be of value in checking and controlling the conditions of operation.

MEAT INSPECTION.

Of the 49,179,057 animals inspected at slaughter by the inspectors of the United States Bureau of Animal Industry last year, nearly 1,000,000 were found to be diseased to a greater or less degree. These animals were purchased by the slaughterers with the knowledge that they would be subjected to inspection, and were, therefore, free from any pronounced external evidence of disease. An important ef-

fect of meat inspection, and one that is not always given consideration, is that it keeps visibly diseased animals out of the slaughter house. Moreover, by far the greater proportion of these animals were slaughtered in the West, where animals are raised especially for this purpose, and are sent to market young—at an age when disease is not very common. These statistics, therefore, relate to selected animals, and cannot be accepted as representing average conditions.

The Federal Government has no jurisdiction within a State, and consequently the act of Congress requiring the inspection of animals slaughtered for food and meat products prepared from the same, only applies to butchers and packers doing an interstate or foreign business. Butchers selling meats and meat products in the same State in which their slaughter house is located are not subject to Federal inspection. The State or local authorities must provide for inspection in such cases. Where there is an abattoir under Federal inspection, in which all animals slaughtered are subjected to a rigid examination, with other abattoirs in the same neighborhood under no inspection, the animals most in need of inspection usually go to the slaughter houses where inspection is not maintained. Until the Federal inspection system is supplemented by local inspection, meat consumers cannot be assured of a wholesome meat supply, unless they restrict their purchases to meat bearing the Government inspection stamp.

There are facts on record to support this statement. In 1907 a system of State inspection was instituted in Pennsylvania to supplement the Federal inspection in so far as was possible, and the developments of even the first few months amply justified the move. A few incidents may be mentioned by way of illustration. 186 cattle, mostly all dairy cows, were examined in four slaughter houses in one city and forty-three were found to be affected with tuberculosis. fifteen to such an extent that the entire carcasses had to be condemned. In another city, 22 cattle were slaughtered during the time a State agent was present in the slaughter house, and six were condemned on account of tuberculosis. A State inspector happened in a slaughter house and found a butcher at work dressing a cow. A few minutes later he saw the butcher remove a piece of the liver and attempt to throw it out of sight. The liver was

tuberculous, and on further examination the cow proved to be so extensively diseased that the carcass had to be condemned. A lung affected with tuberculosis was also found hanging in this slaughter house, but the carcass had been removed and sold before the agent's arrival. In a slaughter house in another city an inspector found four cows and one bull being slaughtered, every one of which proved to be affected with generalized tuberculosis. These are, of course, unusual cases, and do not represent the average of the conditions found. The conditions in Pennsylvania with regard to the tuberculosis in animals are no worse than in any other State where extensive dairy farming is practiced and where the supply of milk cows is kept up by shipments from other States. It is a pleasure to be able to say that a large majority of the butchers are in sympathy with the work. This is as it should be. There is no reason why the butcher and the meat inspector should be antagonistic. The object of both should be to give the consumer a wholesome meat supply. The Pennsylvania Meat Hygiene Service cannot provide a complete and continuous examination at all slaughter houses in the State, but the law provides for the establishment by cities and boroughs, and townships of the first class, of local inspection within the limits of their jurisdiction.

Many cities and towns in all parts of the country have endeavored to insure a good meat supply by appointing inspectors to visit the butcher shops and examine the meat exposed for sale. Much spoiled meat has been excluded from the market in this way, but even where such work is conscientiously done by competent men the good effect is very limited because a correct judgment of the suitability of meat for human food can be made only after the entire carcass and all of the organs have been examined. Some of the most serious conditions may escape detection if only the meat is examined, and furthermore, market inspection is practically limited to the detection of meat that is defective in a manner that can most readily be recognized by the purchaser. It is necessary that the examination be made at the time of slaughter, and it is important that it be made by one who has a knowledge of what to look for and where to look for it.

Meat inspection has to do not only with the examination of slaughtered animals, but also

with the maintenance of sanitary conditions in the establishment and the proper refrigeration of the meats and meat products, thus providing for the protection of wholesome meat against contamination and for its proper preservation, as well as the exclusion of unwholesome meats and meat products from the market. The sanitary condition of slaughter houses not under public supervision is often deplorable. Not only is the construction of such a character as to make cleanliness an impossibility, but suitable drainage is usually lacking, the water supply deficient, practically no provision for storing bones and hides, and no suitable method of disposing of the blood, offal and refuse. The large slaughterers make a profit out of these latter substances, but the small butcher usually throws them away. Sometimes he feeds them to hogs.

The proper disposal of these refuse substances, especially the organs, becomes important from the standpoint of public hygiene if certain parasitic or bacterial diseases are present. Dogs may become infected with echinococci, *cœnuri* and *cysticerci*, and may in turn infect man with echinococci and animals with echinococci, *cœnuri* and *cysticerci*. Organs from animals affected with tuberculosis, hog cholera and swine plague, may produce these diseases in hogs when fed to them in the raw condition. Hogs may become infected with *trichina* in the same way, rendering their flesh injurious to man; and dogs and rats may also become infected with this parasite in a similar manner and assist in spreading the infection. Fluke disease in man, cattle and sheep, and grub in sheep, may be propagated by carelessness in disposing of infected organs, and until the life history of the tapeworms of cattle and sheep and nodule worm of sheep is better known, organs infected with these parasites must be regarded as dangerous. On account of the methods used in disposing of offal and refuse matter, country slaughter-houses and those on the outskirts of small towns have come under the suspicion of being centers of infection, especially when they are located along streams, as many of them are.

Where the blood and the other refuse substances are fed to hogs filthy conditions are usually found. Disease is also transmitted to the hogs, and to dogs. At the beginning of the State inspection service in Pennsylvania sev-

eral lots of hogs fed on raw offal were quarantined and slaughtered under inspection. At one slaughter house where 48 hogs were fed on the raw offal 9 died; the other 39 were slaughtered and 38 were found to be affected with tuberculosis. Of another lot of 14 hogs fed on offal, 3 were tuberculous and 6 had echinococcus cysts in the liver. In another lot of 8, there were 6 with echinococcus cysts. In a lot of 6 one had an echinococcus cyst in the liver. There was one other lot of 6 hogs and these were all found to be free from disease, the only instance of the kind. At one slaughter house, where 23 hogs were being fed on offal, hog cholera developed. Ten hogs died and 4 were condemned when slaughtered, leaving 9 for the owner. Disposing of refuse by feeding it to hogs is not only unsanitary, but may also be expensive.

In the small slaughter house there is not enough refuse material to justify the installation of a sanitary rendering plant to work it up into marketable products, and there is no simple, practical method that is economical and sanitary. The small slaughterer is here at a disadvantage. A number of small slaughter houses at different locations also renders inspection at the time of slaughter rather difficult. The centralization of the local slaughtering business in one abattoir of modern construction, including proper refrigerator facilities and a sanitary rendering tank, is the most feasible solution of both of these problems. It will not only provide for the slaughtering under good sanitary conditions, with convenient facilities for competent and economic inspection, but will also make it possible to derive a profit from the by-products obtained from the offal and other refuse matter.

The central abattoir may be a union slaughter house, owned and operated by a company of butchers; an abattoir owned by citizens and designated by the local authorities as the official abattoir, where all local slaughtering must be done, or a municipal abattoir, owned and operated by the local authorities. Trade jealousies have prevented the building of union slaughter houses by butchers, but in Bridgeport, Conn., Buffalo, N. Y., New Orleans, La., and Nashville and Knoxville, Tenn., there are privately owned slaughter houses in which all animals must be slaughtered under municipal inspection. The meat is marked with the city

stamp if found to be wholesome, and no meat may be sold within the city without this stamp or the United States stamp. Birmingham, Ala., and Paris, Texas, a city of only 15,000 population, have municipal abattoirs and are in advance of all other municipalities in this respect.

The experience of Paris, Texas, is very encouraging to those interested in the establishment of municipal meat inspection. Previous to the erection of the municipal abattoir, the same conditions existed in and around Paris as may be found around cities and towns in this State, except that the sanitary conditions were much worse than exist here since the operation of the State Meat Hygiene Service. The municipal authorities of Paris made an effort to improve the conditions, but they did not succeed, principally because the slaughter houses were located outside of the town and beyond their jurisdiction. An effort was then made to have the individual butchers form a stock company and build a central, union slaughter house, but business jealousies prevented the success of this plan. The mayor, Mr. E. H. McNistion, and others interested, then decided to erect a municipal abattoir. Plans and estimates were obtained, and the citizens were asked to vote on a bond issue to provide the necessary funds—\$10,000. The proposition was approved, and the abattoir was erected and began operation in December, 1909.

The capacity of the plant is fifty cattle a day of ten hours, and there are also facilities for hogs and sheep. This is ample for the present needs of the city, and the plant has every convenience and sanitary provision to be found at the largest plants.

A feature worth noting is the location, which is one of the principal streets of the town, with dwellings on all sides—one within 400 feet. Not only the offal from the animals slaughtered, but also dead animals from the city are rendered and reduced in the plant, without offense to people in the neighborhood. Sanitary rendering tanks are used and the offensive gases and odors are condensed and trapped into the sewer or passed under the fire-box of the boiler and burned. The selection of such a site by the Paris authorities for the abattoir is quite in contrast with the action of some of the local Boards of Health in Pennsylvania in forbidding the erection of slaughter houses within the limits of their towns.

The plant is operated by the city, and slaughtering is done for the local butchers at fixed charges: \$1.25 for each beef, and 75 cents for each calf, sheep or goat. These charges cover not only slaughtering, but five days' cold storage and delivery on the hook in the butcher's shop. If a carcass is left in the refrigerator more than five days, an additional charge of 10 cents per day is made. The owner of the animals slaughtered also receives the hide, all of the tallow adhering to the carcass and the "rough fat" of the offal. The city retains the blood and offal, with the fat adhering to the latter, and this is worked up into tallow and tankage, which is disposed of at market prices. The other by-products, bones, hoofs, bristles, etc., are not worked up at the present time.

It was not the intention to make the plant profitable, but only self-sustaining, and in a letter dated February 27, 1911, after the plant had been in operation over two years, the mayor says:

"We are greatly pleased with it, and have found it abundantly self-sustaining in every way. We fully believe our system offers a very practical and economical solution of the local meat problem in all small cities."

He also says:

"We have demonstrated to the satisfaction of every local butcher that we can hang a carcass on the hook in his shop cheaper than he can; and further, that there is no legitimate comparison between our system and the old one we formerly employed."

A thorough inspection is made of all animals slaughtered in the abattoir, including an ante- and post-mortem examination. The chief inspector is a graduate veterinarian, who had had previous experience and training in the service of the United States Bureau of Animal Industry. When an animal is rejected on ante-mortem examination the owner is notified, and the animal is at once removed from the stock pens. If the carcass is condemned on post-mortem examination it is placed in the offal tank and the owner is paid the value of the tallow and tankage. The chief inspector has charge of the plant. The regular employees include two slaughterers, one driver, one engineer, and one "dead stock" man.

Slaughtering at the municipal plant is not absolutely compulsory, but an ordinance requires that all slaughtering must be done un-

der the same sanitary conditions as exist in the municipal abattoir, and the result is that all local slaughtering is done at the city abattoir.

BASILAR HEADACHES AND NEURASTHENIA OF OCULAR ORIGIN NOT USUALLY RECOGNIZED.*

By OSCAR WILKINSON, A. M., M. D., Washington, D. C.

Having recently seen several cases of basilar headache associated with general nervous breakdown which were due to ocular conditions which had been overlooked on account of the absence of eye symptoms is my excuse for offering a paper to you on this subject. In March of last year I read a paper before the Medical Society of Washington, bearing on this subject, which, however, covered only cases of exophoria.

I wish to call special attention to this class of cases on account of the absence of any ocular symptom whatever except a tired feeling on continued use of the eyes.

These cases are usually seen by the general practitioner; they often go from one to another, seeking relief, and, in their despair, often leave the reputable physicians, and fall into the hands of osteopaths, Christian Scientists, and various other quacks.

Symptoms. The symptoms usually seen in this class of neurasthenics are a more or less constant basilar headache, the pain being especially marked in the mornings after the use of the eyes during the preceding evening or after spending the evening at a theater, and is usually limited to the base of the brain, with a straining and pulling sensation down the spinal column. This condition is accompanied with a fear of some impending danger, associated at times with a fainty or sinking spell. These patients are usually unable to travel without being car sick or having a severe attack of headache, which is often accompanied with vomiting. They are generally diagnosed by the general practitioner as neurasthenics, hypochondriacs, nervous break-downs, and various other terms.

The ocular condition at fault in these cases is one of the various heterophorias, or improper balance of the extraocular muscles, one eye usually deviating outward, upward or downward,

or rather, having a tendency to these deviations. In fact, basilar headache I have found so constantly present with either exophoria or hyperphoria, that I would be surprised not to find one of the two conditions in a case which had been suffering from nervous prostration, associated with chronic headache at the base of the brain.

One of the chief reasons why these cases are not recognized by the general practitioner as being of ocular origin is the absence of ocular symptoms. Many of these patients have been to competent oculists and have used glasses for correction of hypermetropia, or other error of refraction. The correction of astigmatism, myopia or hypermetropia in these cases will not give the desired relief; hence, after using what they supposed to be the correct lenses from a competent oculist, it is but natural that they should conclude that the condition was not due to their eyes; in fact, the correction of hypermetropia in cases of exophoria does not only fail to relieve, but where the correction is full it is apt to aggravate the symptoms; whereas, if the patient has esophoria associated with these symptoms the full correction of the hypermetropia would, in all probability, give relief.

The following cases are illustrative of the type of patients to which we refer:

Case I.—Mrs. H., aged 50, sent to me by Western physician. Had been suffering from attacks of basilar headaches for fifteen years, associated with nervousness and general weakness. She was also afflicted with insomnia, for which she had been taking trional and sulphonal, and was incapacitated for work of any kind. She had been treated by a number of internists in Cincinnati and Chicago, and had her eyes examined by two or three as competent ophthalmologists as there are in the country, who had prescribed glasses for her, which gave no relief, owing to the fact that they did not attempt to relieve the exophoria present in her case. She had taken every remedy for headaches that she had ever heard of, and had gone from place to place seeking climatic relief. On examination I found that she had two and a half degrees of hyperopia, associated with presbyopia, and with five degrees of exophoria for distance and ten degrees of exophoria for near. I prescribed for her the same lenses for hyperopia which she was wearing, and gave in these lenses, a prismatic correc-

*Read before the Society of Northern Virginia and District of Columbia, November 15, 1911.

tion for exophoria for distance and for near. I also gave her exercises to be practiced twice or thrice a day in order to increase the strength of the weakened internal recti. Within the past ten days I had a letter from her stating that she had not had a real headache since I saw her in May, and that, furthermore, she had gone through the trying ordeal of preparing for a wedding in the family, without having a bad headache, a thing, as she expressed it, which would have been impossible a year ago.

Case II.—Mrs. W. M. B., aged 38, has been a nervous wreck for three or four years, and unable to do any housework two-thirds of the time. She had such attacks of weakness that she felt if she did not lie down she would faint. She had a boring, deep-seated pain at the back of the head and in the neck, a peculiar, cord-like pulling down the spine, which she was sure was due to rheumatism, but which did not yield to rheumatic remedies. She had no eye pains, and was sure that she had no ocular defects; was positive that no glasses were needed,—she “saw better without them.” She had been treated by three or four reputable physicians, and her so-called “broken neck” rubbed back into place by a diligent osteopath. After all this, strange to relate, an evening at a game of cards, or with a book, or at a theater, would put her in bed for a day or two.

On examination I found:

O. D. + 1.0c + 0.25 cy. ax. 90° V. six-fifths.

O. S. + 0.75^s V. six-fifths.

1½° exophoria. D. 1¼ right hyperphoria. 7 exophoria (near).

I prescribed the lenses for the refractive defect, and corrected 1° exophoria and 1° right hyperphoria by means of prisms, and gave her strychnine, galvanic electricity over the eyes and at the base of the neck twice weekly, and ordered exercises for exophoria twice daily. Within two months she had forgotten her headaches, and was practically well of her nervousness.

These are but illustrative cases, the number and variety of which could be easily increased by a reference to my case book.

Treatment.—Of course, general tonics and correction of the errors of refraction will be of benefit in all these cases. The usual treatment consists in the correction of the error of refraction, whether it be hyperopic, myopic or astigmatic, and correction of the deviations.

The deviations in these cases are either outward, exophoria, or upward, or downward, hyperphoria. The symptoms are usually more marked in the hyperphoria than in the exophoria for the same amount of deviation, but exophoria is much more frequently found than hyperphoria.

The treatment of exophoria consists in the use of prisms, bases in, in connection with correction of the error of refraction, and exercise twice or thrice a day, of the weakened internal recti.

The method of exercise is usually as follows: The patient holds a card with a small spot on it before the eyes; it is held at arm's length and slowly brought closer to the eyes. As it approaches to within one to three inches of the nose the spot will be seen double. The card should then be held at arm's length again, and again brought closer to the nose until the spot is seen double. This should be continued from five to ten minutes. A convenient method is to make a mark on the thumb-nail and use this in place of the card.

In cases where the deviation is above six or eight degrees, and the symptoms are not relieved by partial correction of the defect with prisms or exercise, operative procedure is indicated, either an advancement of the weakened internal rectus or a tenotomy of the stronger external rectus.

Treatment of cases of hyperphoria, when of a low degree, consists in combining with the correction of the error of refraction, a prism, base either up or down. Hyperphorias of under five degrees are usually amenable to treatment by prismatic correction. In hyperphoria we are unable to use so convenient an exercise as in exophoria; therefore, we order exercise by means of prisms.

I have not found esophoria so frequently associated with basilar headache. It has been my experience that a frontal headache is more usually associated with esophoria. Esophoria can be relieved by full correction of the refractive defect, muscular exercise, by the use of prisms, and by operative procedure in rare cases. I have found the use of the galvanic and faradic currents of great benefit in toning up the extra-ocular muscles, especially in neurasthenic subjects.

WHY DO WE GET OUR CANCER CASES LATE?*

By E. B. CLAYBROOK, M. D., Cumberland, Md.

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In taking up this question, I do not propose to answer it, but to present some sidelights on it from the viewpoint of one engaged in both general practice and surgery in the wilds of the Alleghenies.

In studying any question that arises, our perception and conclusions depend a great deal upon the angle of vision from which it may be viewed. In considering this question of cancer, we must first consider it from the viewpoint of the surgeon, and, secondly, as it appears to the general practitioner, and, last, but not least, as it appeals to the patient himself, who is primarily the one most to be considered, and whose life is made or marred by the way the case is handled.

From the standpoint of the surgeon, we know that the statistics of cancer leave much to be desired; and while the statistics of cures have improved wonderfully in the last decade, this is due almost solely to improved surgical technique rather than to earlier institution of surgical measures. This technique, so ably inaugurated by our fellow member, Halstead, and so well finished by Crile, of Cleveland, has been so perfected that we can scarcely expect further improvement of statistics from this source, and must needs return to the universal lament of the surgeon, "If we could only get the cases earlier we could do a great deal better."

That these cases come to operation late, the surgeons say is not their fault, but the fault of the general practitioner. While they are sent to the surgeon late, I do not agree that it is the fault of the general practitioner; I think that the blame should be placed nearer home.

Ever since the wandering in the Wilderness, man has always been ready and willing to hunt up someone to be the goat. The general practitioner has been the goat in this matter of cancer for so long that he now takes it as a matter of course, and considers it a part of the white man's burden. But, if we will look at it for a while from his point of view, we can readily see that the surgeons of this country are themselves almost wholly responsible for this con-

dition of affairs, and should set about to remedy it as soon as possible.

Cancer is conceded to be a surgical disease, and its authoritative literature comes almost exclusively from a surgical source. And yet, if the general practitioner is a reader and studies his cases, and follows the literature as it appears, he is led to believe that there is some special characteristic of cancer that makes it possible to recognize and differentiate it from other new growths. He is jealous of his diagnostic ability and waits to make his diagnosis before he sends the case to a surgeon. So he measures his case by the measure given him by the surgeon, and waits until he is good and sure, and then sends his case to the table late—with the usual result.

Scarcely a work on surgery that we can find, old as well as those just from the press, that deals with this question, that does not give prominence to late symptoms of cancer, or to symptoms that are the result of cancer, rather than being symptoms of cancer itself. One of the most recent works, heralded by the reviewers as an excellent and practical work, in dealing with the symptoms of cancer of the breast, gives first, pain; second, ulceration; third, glandular involvement of the axilla. None of them in dealing with cancer of the stomach fail to mention absence of hydrochloric acid, presence of lactic acid and the Oppler-Boas bacillus, coffee-ground vomit, a palpable tumor—yes, and even cachexia. Are these early symptoms of cancer, think you? Are some of them symptoms of cancer at all?

We all know, as surgeons, that when this array of symptoms, or even a majority of them are present, the patient is doomed, and is certainly suffering with a disease that is not still local, but has about completed its course. Far be it from me to decry clinical chemistry and microscopy; but when Deaver made the statement at Atlantic City that more lives had been lost on account of gastric analysis than had been saved by it, I believe he was right. Not because the work of the chemist and the microscopist is not well done, but we have not learned to analyze the findings so as to make a diagnosis while the disease is still local. Many mention cachexia as a symptom of cancer, but I note one hopeful sign, in that one writer recently noted that if systematic lavage is kept up, cachexia does not occur until very late in gastric cancer, and he thinks it probable "cachexia is

*Read before the Medical and Chirurgical Faculty of Maryland, at Baltimore, April 26, 1911.

not due to cancer at all, but due to absorption of deleterious matter from the stasis." Kehr, in a very recent paper, says that when the diagnosis of cancer of the gall-bladder is made before operation the patient is already doomed; but in those cases when unsuspected cancer is found at operation it is generally local enough for a good prognosis. When conditions are thus, and we must acknowledge this as the truth, how can the general practitioner be blamed for following directions, reading what the surgeons have to say about the subject when he has a suspicious lump in the breast, or a gastric disturbance that has not responded to treatment, and following the advice given?

He measures his case by the surgeon's measure, and sends it to the operating room too late, simply because he is following the rules laid down by the surgeons in the text-books. If we accomplish anything in this line to improve our cancer statistics, we must first be absolutely frank with ourselves, and equally frank with the general practitioner. We must find some earlier means of diagnosis if possible. Recent work has been developing along the line of sero-diagnosis, but it seems to me that when cancer has advanced far enough to make a diagnosis by the serum, that it is not still a local process. We hope our friends with the microscope and the test tube will be able to solve the problem for us, but until they do—or we find some earlier means—we might as well go on record and tell it to the general practitioner, that there is no early symptom of cancer, except a lump, and interference with the function of the organ involved, if it be a functioning organ that is involved. That this disturbance of function will not present any well-defined picture, but will vary in each case and show nothing distinctive except that it does not show a tendency to respond to treatment.

If we do this systematically, forget, except for the purpose of history and treatment, the time-honored symptoms of cancer, and stand firmly on the platform that all new growths are dangerous; that all new growths that are growing are more dangerous; that all new growths that are growing in a patient over thirty-five are most dangerous; that in internal organs, cancer, in its early stages, only causes disturbance of function which may manifest itself in many ways, none of which are characteristic, and that early exploratory work must, therefore, be done, we will then have gone far toward ad-

vancing the cause and the saving of lives in the future.

If the surgeon frankly admits that it is impossible for him to make an absolute diagnosis of cancer in the early cases, the general practitioner will have exploratory work done on suspicion.

Now, from the standpoint of the patient, we all know that they all hesitate to show a lump or new growth to the doctor until they are driven to it, for fear that it might be a cancer. And why? Because the statistics of cancer are bad; because they have seen friends mutilated by late operations, with no result except to prolong their agony, and because they think it is "in the blood," and often when they are driven to the doctor their surmise is almost logically correct. Consequently, they do not come to the general practitioner early because our results are bad, and our results are bad because they do not come early and we have thus established a "vicious circle."

A great field for education is the influence of the trained nurse, who is now ubiquitous. If those of us who are engaged in the teaching of nurses will urge upon them the viewpoint as outlined above, and to impress it upon them that they go forth as missionaries in the cause of cancer, a great good is bound to result, for a patient will speak of a new growth or suspicious lump to a nurse long before she will speak of it to the doctor. In training those with whom I come in contact, I am constantly holding this picture up to them and urging them to be suspicious of all new growths, and send for the doctor to see them; and I think the effort should be made in all hospitals having training schools.

RANDOM THERAPEUTIC NOTES ON IODINE AND IODIDES.

By JOHN ALBERT BURNETT, M. D., Marble City, Okla.

Recently there has been quite a lot said on the therapeutic uses of iodized calcium, some thinking it was a chemical and some thinking it a mere mixture of lime and iodine. It is now a well-known fact that it is not a chemical, but a mixture, though it is a very good way to use iodine internally. Dr. George Roberts makes iodized lime as follows:

R—Iodine resublimedgr. xv.
Limegr. lxxxv.
Mix in a mortar.
Dose—As needed.

Iodized lime is used for various purposes. Dr. Ira A. Marshall used the following for fourteen years in croup without a single death:

R—Iodized lime gr. xij.
 Pilocarpine gr. ss.
 Boiling water $\frac{3}{4}$ ij.
 Glycerin $\frac{3}{4}$ j.
 M.—Make solution.

Sig.—One teaspoonful every 20 minutes until better; then every hour as long as needed.

The above is useful in various coughs. One physician uses the following in colds, la grippe, etc.:

R—Iodized Lime gr. x.
 Fld. ext. Gelsemium gtt. xxx.
 Water $\frac{3}{4}$ ij.
 M.—Sig.—Teaspoonful every two hours.

The amount of iodine can be greatly increased in the above prescription, and bryonia added if desired.

Another useful form of iodized calcium is:

R—Iodine gr. iv.
 Potassium iodide gr. xx.
 Saccharin gr. iv.
 Lime Water, q. s. ad. $\frac{3}{4}$ lv.

Sig.—15 to 30 drops or more, in hot water every hour.

Dr. W. B. Wood uses the following to abort or prevent tonsils from "gathering" in cases of tonsillitis:

R—Tinct. Iodine $\frac{3}{4}$ jss.
 Tinct. Phytolacca $\frac{3}{4}$ iv.

M.—Sig.—Apply to the tonsils with a brush or cotton-tipped probe every two hours.

Dr. F. C. Harris uses the following in rheumatism:

R—Potassium Iodide $\frac{5}{8}$ iv.
 Fld. ext. Phytolacca $\frac{3}{4}$ iiij.
 Fld. ext. Colchium Root $\frac{3}{4}$ jss.
 Fld. ext. Cimicifuga $\frac{3}{4}$ jss.
 Elix. Gentian, q. s. ad. $\frac{3}{4}$ iv.

Sig.—One teaspoonful in water after each meal.

There is a very interesting and instructive article, "My Plan in the Use of Iodine," by Dr. W. M. Alter, in *Medical Summary*, July, 1910. I will quote from it, as follows:

"My plan is this: I saturate a small quantity of absorbent cotton (wool is better) with tincture iodine, and ignite it and allow the patient to inhale the fumes from it as it burns. If this is done in a closed room, the air will become charged with the gas from the burning iodine and will produce its alterative effect in

a more marked degree than in the ordinary method of administration. I have observed that this method produced some stimulation of the lachrymal function, and after a treatment there appeared to be some considerable sharpening of vision by stimulation of the optic nerve, with, perhaps, stimulation of the whole visual apparatus." He further states that "Other noticeable features are the odor of the drug on the breath, the perspired fluid, the urine and fecal dejecta."

Dr. Alter has adopted this method of using iodine for obtaining its therapeutic effects in certain pathological conditions of the throat and lungs, pharyngeal affections, and, in fact, all affections which our nomenclature allows us to designate as catarrhal, tuberculosis, syphilis, etc. Sometimes he adds a little potassium chlorate, and thinks it is more rapid in action in the relief of dyspnea.

There is an article, "Iodine Oil," by Dr. Edward H. Shields, in *Medical Brief*, April, 1907. It tells how to use iodine in goose oil, and the article deserves reading by all who are interested in iodine therapy—and all should be. It is not very well known that goose oil is a powerful penetrating substance, and acts as a carrying agent for many remedies.

In an article, "Iodine As a Therapeutic Agent," by Dr. T. W. Williams, *Medical Summary*, Feb., 1905, he claims that the administration of iodine by inunction is the best method. He believes that there are many therapeutic agents that can be administered *via cutis*, and that they enter the circulation and produce their known specific effects even more rapidly and certainly in this than in any other way, because they do not pass through the digestive tract, create little or no disturbance, except in over dosage, and can, for these reasons, be administered in much larger doses. He claims the remedial effects of the iodides are due wholly to the iodine they contain, and when iodine is introduced into the circulation in its free state, free from any irritant effect of its base, the results are better. It is a well-known fact that when tincture of iodine is applied locally there is little or no effect, except the local germicidal action and counter-irritation. The alcohol soon evaporates and the metallic iodine is left on the skin.

Dr. Williams has introduced the following method of preparing what he calls "glycerole iodine," and claims that its external use will

take the place of the internal use of iodine or the iodides when, for any reason, the therapeutic uses of iodine for systemic effect are indicated in any condition. He says: "Let the chemist add one ounce of resublimed iodine to twelve ounces of alcohol, and sufficient potassium iodide to effect solution. Distill this over in a glass retort. The iodine will all go over with the alcohol and be condensed, leaving any crude iodine the specimen may contain and the potassium salt in the flask. To the product thus obtained, add sufficient commercially pure glycerin to make one pint. You now have iodine in a form readily absorbed into the circulation through the skin or mucous membrane. The glycerin holds it in solution on the skin until it is all absorbed, leaving no stain—unlike the tincture. I have tried all other methods of preparing it by adding glycerin to the tincture or dissolving the iodine in glycerin, alcohol and water, but the product is not the same and will not produce the same therapeutic effects." Dr. Williams uses "glycerole iodine" on almost any part of the body, but for its constitutional effects considers it better to apply it over the inguinal and other glands, or over the side, ribs, or breast. He uses it in chronic catarrh, applied on the inside of the nose with a cotton swab, and also on the outside of the nose. In cases of painful joints of rheumatism or gout, he says the relief it affords is almost instantaneous. He uses it in inflammatory rheumatism as an alternative par excellence, as a tonic, stimulant, diuretic, diaphoretic, and emmenagogue; in goiter, adenitis, croup, bronchitis, coryza, la grippe, colds, hoarseness, scrofula, syphilis, glandular enlargements, splenic and hepatic enlargement of chronic type, hypertrophic affections of mammae, testes, and uterus (fibroid), caries, chorea, cachexias in general, and various other conditions. He applies the "glycerole iodine" locally to any absorbent surface of the body, usually once a day, after the system is sufficiently charged to exhibit symptoms of iodism.

Proceedings of Societies, Etc.

NORFOLK COUNTY MEDICAL SOCIETY— SECTION ON PRACTICE OF MEDICINE.

Reported by FRANK H. HANCOCK, M. D.

The subject for discussion at the meeting on

January 12, 1912, at which Dr. Charles R. Vance, chairman, presided, was:

The Prevention of the Spread of Venereal Diseases in the City of Norfolk.

Dr. Powhatan S. Schenck, Health Commissioner, describing the methods put into practice by the Board of Health, said, in part, that there was certainly no reason why venereal diseases should be an exception to the law which requires all contagious diseases dangerous to the public health to be reported to the sanitary officers.

No sanitarian attempts the impossible task of exterminating disease; he can only prevent disease germs coming in contact with the healthy. All municipalities engage in a strenuous endeavor to prevent this contact in disease where hundreds are involved—diphtheria, scarlet fever, typhoid, tuberculosis and whooping cough—but have remained contentedly quiescent in the presence of greater scourges, gonorrhea and syphilis, whose essential features are their effects upon the reproductive organs, damaging and destroying the functions through which life is perpetuated—gonorrhea by its inhibitory influence on the reproductive capacity, and syphilis by its blighting effects on the product of conception, as has been strongly stated by Morrow.

Dr. Schenck was aware that there was a public sentiment against the legal recognition of prostitution, and that we are not allowed to talk much about the dangers and the communicative modes of venereal diseases, because such information is offensive to the public taste, but he believed that the incalculable benefits that had accrued to the public through the exercise of power vested in boards of health in controlling the contagions mentioned above, could be made to apply to these greatest of social evils, the ravages of which were beyond computation.

The speaker discussed the methods employed by many municipalities engaged in this work and their comparative failures, and said that their weakness had been due, in his opinion, to the overlooking of the *masculine spreader of disease*, and, further, that nowhere had it been possible to entirely suppress clandestine prostitution. This latter was the most difficult problem with which his office had had to contend, and undoubtedly the spreading of such contagious disease in Norfolk now was largely from that source. Owing to the fact that a great number of the regular male visitors to houses of prosti-

tution in this city were under military government, and thus susceptible to discipline and regular examinations, both the infected woman and her paramour, or occasional visitor, might be promptly isolated, and to this the success which has attended the movement to limit venereal diseases in this city must be largely attributed.

That it has been successful, that it has materially limited the spread of gonorrhea and syphilis through contact with public prostitutes, and, furthermore, that it was chiefly through public prostitutes that gonorrhea was being contracted, he is prepared to show.

Dr. Schenck wonders how such moralists in our profession as Howard Kelly, and Osler, and Morrow, and van Ijsselstein could believe, as they do, that only the more harmless of the contagious diseases should be subject to obligatory notification and control; that we should provide healthy food, but not a healthy coitus; that we should ignore the tremendous fact that syphilis and gonorrhea are really *city diseases*, and that from these centers of infection they spread over the rural districts and are there transmitted to wholly innocent people, often in an extragenital way. Must we really sit quietly by and watch this procession?

The fact that syphilis ceases to be virulently contagious after a certain period is a matter of general knowledge, and of which formidable use might be made. Now, if no new syphilis were introduced into a community, and if we could isolate those who are already diseased, just as we screen for mosquitoes, until that innocuous period is reached, the malady would cease to exist. Yellow fever existed in Havana for a hundred consecutive years, but disappeared at once when the mosquito was prevented from reaching the sick by the interposition of a wire screen.

We cannot at this period of the world's age exterminate syphilis or gonorrhea, but we can confine and restrict them, and we are going to do so, notwithstanding van Ijsselstein's statement that examination of a prostitute was a contaminating thing for a physician to do, and left him socially unenviable.

When the public finally learns through education that venereal diseases are, of all diseases, the most contagious, and are of all contagions the most shocking and the least controlled, they will require through an accelerated public conscience that these diseases be put upon the index, subjected to the strictest surveillance, that

they may be reduced in their mortalities and their morbidities as have all diseases of which the public conscience has demanded regulation; and fastidious Phariseism, and infantile ignorance, and all effeminacy will disappear from the minds of men. Society cannot proceed upon the basis of clarifying the atmosphere of respectable diseases; as population becomes more and more dense, the uglier facts must be dealt with; must be subjected to close and searching investigation. Can any man lawfully contend that these diseases should be left to ripen, to rust, to mold, rather than to be expurgated—snuffed out!

In defining the system put into operation about a year ago in Norfolk for the control of venereal diseases, Dr. Schenck said that he had corresponded with the health commissioners of various American cities where similar methods obtain, and had studied the practices of German cities, and then, with the acquiescence and co-operation of the officials of the United States Navy Yard at Norfolk and the Receiving Ships Franklin and Richmond, had adopted the following procedure for this city: The segregated district was divided into four sections, and a medical examiner appointed for each, whose duty it was to examine each woman in his territory every fourteenth day. Through the aid of the Police Department, which rendered the Board of Health invaluable assistance in the execution of this plan, the street numbers of the houses of prostitution were taken, the names of the women in charge of each, and the names and numbers of the inmates.

The duties of the examiners were outlined as follows: A careful examination of each woman from head to foot, eyes, mouth, nose and throat; the skin surfaces of the body for any eruption, ulceration, herpes, ring worm, condylomata or tumor; and, finally, a careful vaginal examination for any anomaly, blennorrhagia from the urethra, cervix or Bartholin glands, abrasion of the vaginal mucous membrane, or any other dystrophy. Whenever there was any collection of mucus in the vagina, a slide was taken and immediately examined by the City Bacteriologist. Thus came about the remarkable situation I am now going to speak of.

When this work began there were on the recruiting ship Franklin alone 165 cases of gonorrhea among its 2,000 apprentices; after a few months that number was reduced to about 25, as the records of that ship will show. This was

not accomplished without trouble in so short a time, and was really due to the fact that those men were under military discipline, and not only could be isolated themselves, but the place where they contracted the disease could be sought and found, thus giving us a double check on the sources of infection. Every woman who has any sort of venereal or contagious disease is isolated in some effective manner, and thus the man and woman both are kept from contact with the healthy.

The woman found to be free from disease by the examiner is merely given a certificate stating that she has complied with the rules of the Board of Health up to a certain date.

Many girls have been found broken in health from tuberculosis, alcohol, drug addictions, and have been sent to some State or charitable institution to spend their last days in comparative comfort. Methods of hygiene have been taught and insisted upon, baths, irrigations, fresh air and sunshine.

In addition to the four medical examiners, a sanitary inspector has been appointed, whose duty it is to visit each house of prostitution at least once a week and report to the Commissioner of Health the conditions found there.

Dr. D. Lee Hirschler thought that it was surely praiseworthy to attempt to trace any infectious disease to its origin, but doubted if it was practicable, or could be carried out in the case of venereal diseases originating in prostitution. Regulation or legal recognition of prostitution had never been a success, and he doubted if it ever would.

Do periodical medical examinations afford a sufficient guarantee against contagion? If they do not give security against contamination they are productive of more harm than good, because as soon as the public knows that prostitution is under control, is regularly licensed, the number of men who avail themselves of the opportunity increases considerably; a great many men are deterred from such intercourse on account of fear of contagion, and if that dread is removed will visit those resorts freely.

Dr. Hirschler now quoted from an article on the "Regulation of Prostitution," by Prof. van Ijssellstein, of Geneva, written in 1889, in which that author wrote that when he was put in charge of the examination of Public Houses at The Hague some years before this article was written, he noticed that there was an increase of attendance when the fact became

known that regular examinations were being made.

Quoting further from this monograph, Dr. Hirschler agreed with the statement that "all contagion which occurs in houses under control of the authorities is a proof of the inadequacy of the system of sanitary examination," and since such examinations give a false sense of security, inspire a misplaced confidence. He believed he was justified in condemning a system which presented so many objections, and such few problematical advantages.

Dr. Ludwig Mendelsohn, replying to Dr. Hirschler, said that at least one thing was certain in all this vagueness—that the attitude of indifference to the social evil recommended by Dr. Hirschler and the Austrian Professor van Ijssellstein would certainly *never result in the elimination of these diseases*; that syphilis was among the earliest and oldest contagions, man's concern about it being expressed in his first writings, his prehistoric bones marked by signs of its long existence; that it was still going on blighting and crippling and killing. A recent estimate was that fifty thousand new cases occur in New York City alone every year, where as every other great contagion that threatened the human family was being bridled and conquered.

There were men too in those days who rose in insurrection against any interference with the progress of the great epidemics, saying it was impious to delay the destruction of the human race in this way, since such a destruction had been benevolently arranged by the Master of Human Fate. So all along Medicine has had to fight such influences and such misguided people, and now in the twentieth century there are those who would piously refrain from touching so foul a thing as syphilis, would reverently leave it, as Dr. Kelly does, to a Higher Power.

Referring to the chief difficulty of the sanitary control of prostitution, as experienced in the German cities, the control of the secret or clandestine prostitutes, Dr. Mendelsohn observed that there was a tendency here now upon the part of women, secretly selling their favors, to come from their hiding places and ask to be regularly examined in order that they might have the advantages the card gives, if their conditions were such that they could obtain it. So visitors to houses of prostitution in Norfolk are learning that the chances of con-

tagion are minimized among the women that are regularly examined.

Referring to the monograph of van Ijssellstein, quoted by Dr. Hirschler, the speaker said that that article, written twenty odd years ago, referred to a period still fifteen years earlier or forty years ago, when all blennorrhagias were the same, because there were no microscopic tests to differentiate them, nor Wassermann reactions to diagnose a syphilitic from a non-syphilitic lesion, both of which could be put into practice to-day.

Finally, if doctors were required to report cases of gonorrhea and syphilis occurring in their private practices to the boards of health, together with their supposed sources of contagion—without reporting the names of their patients—very much the same results would be obtained in civil circles, as among the enlisted men of the United States Navy, as reported by Dr. Schenck.

Section adjourned.

THE MEDICAL EXAMINING BOARD OF VIRGINIA

Met in Lynchburg, Va., Carroll Hotel, December 19, 1911, 8 P. M.

On roll-call the following members were present: Drs. R. W. Martin, president; R. S. Martin, secretary-treasurer; J. E. Warinner, R. D. 4, Richmond; R. B. James, Danville; J. G. Rennie, Petersburg; J. N., Barney Fredericksburg; Herbert Old, Norfolk; H. W. Dew, Lynchburg; W. W. Chaffin, Pulaski; Robert Glasgow, Lexington; E. C. Williams, Hot Springs, and Harry S. Corey, Richmond.

The minutes of the last meeting were read and adopted.

The committee requiring all applicants to present photograph when registering was not ready to report, and same was continued.

The report of the legislative committee was postponed until meeting of Board, Wednesday, December 20, 8 o'clock.

Dr. J. E. Warinner was elected vice-president of the Board in place of Dr. E. T. Brady, resigned.

Dr. R. S. Martin offered the following resolution, which was adopted:

That the resignation of Dr. Brady, as a member of this Board, be accepted with regret, and that its members unanimously extend to him their assurance of high personal regard and appreciation of the fidelity with which he has discharged the duties of his

office. Dr. Brady has been a member of this Board since 1895 and by his uniform courtesy to all and by the energy and devotion he has given to his duties has won a high position in the medical profession of Virginia.

It is with extreme reluctance that we sever our relations with him, which have existed so long and so agreeably.

That a copy of this resolution be sent Dr. Brady and also spread on the records of this Board.

Dr. R. S. Martin offered a resolution asking for a committee to be appointed to consider the advisability of a practical, as well as written examination of all applicants. After considerable discussion by several members of the Board Dr. Herbert Old introduced the following resolution, which was adopted.

That a committee of three be appointed to look into the advisability and practicability of holding practical, in addition to written, examinations and report at the June meeting of the Board.

The president appointed Drs. Barney, Wright and Glasgow to consider the above resolution.

Dr. R. S. Martin offered resolution that photographs of deceased members, with short sketches of their lives be published in the next Proceedings of the Board. This was to extend back to 1900. Adopted.

The secretary was directed to prepare application blanks for each applicant to fill out and sign when he makes application for examination, at time of registration or during vacation.

The committee on questions reported that all examination questions had been examined and found satisfactory.

Dr. Old was appointed member on oral committee.

Dr. Old moved that the Board meet in Richmond, June 18, 19, 20, 21, 1912. Adopted.

The president instructed the Reciprocity Committee to strictly comply with the By-Laws and Resolutions of the Board in regard to granting reciprocity.

The Board adjourned on motion of Dr. Glasgow.

The Board met at Carroll Hotel, December 20, 1911. Present: Drs. R. W. Martin, Chaffin, Williams, Glasgow, Warinner, James, Old, Corey, Barney, Wright, Dew and R. S. Martin. Dr. Boyd, of Winchester, was present on Thursday and conducted his examination.

Dr. Glasgow, chairman of Oral Committee, made report of said committee, which was adopted.

Dr. James, chairman of the Reciprocity Committee, made his report, which was adopted.

In regard to certain letters which were sub-

mitted to your committee from the Ohio State Board, and from Texas, and one from Oklahoma, it is recommended:

(1) That the secretary be requested to send a copy of the circular of information to the secretary of Texas Board of Medical Examiners, stating that we do not reciprocate with Osteopaths.

(2) That the secretary be requested to notify the secretary of the Ohio State Medical Examining Board that we are willing to reciprocate with this State under the conditions mentioned in their circular.

(3) That the secretary be requested to notify the secretary of the Oklahoma Board of Medical Examiners that we do not grant licenses to practitioners who have not stood a State Board examination; therefore we cannot grant reciprocity to such practitioners who hold a certificate from the Oklahoma Board, though we may be willing to grant reciprocity to those holding a certificate from this Board who have passed a regular written examination before some board with which we have reciprocity, the Oklahoma Board included.

R. B. JAMES,
J. E. WARINER,
E. C. WILLIAMS,
Committee.

Dr. Glasgow, chairman of the Committee on Identification of Applicants, made the following report, which was adopted:

That each candidate will be required to file with his or her application for examination, a recent unmounted photograph of himself or herself, on the reverse side of which the candidate must write his or her name before a notary or other legal official, who must certify over his seal to the identity of the photograph with the candidate and to the genuineness of the signature.

No candidate will be admitted to the examination who has not complied with this rule.

RO. GLASGOW,
HERBERT OLD,
J. N. BARNEY,
Committee.

Dr. Old, chairman of Legislative Committee, made a report of the proposed changes in the State Medical Law. After considerable discussion by members of the Board, the following resolution was passed:

That the Legislative Committee be continued and that the law suggested by same be submitted to Judge E. J. Harvey for suggestions.

On motion, Drs. Old and Barney were nominated to the Governor as delegates to the next meeting of the Medical Council, which meets in Chicago, February 26 and 27, 1912.

It was moved and carried that each member present be paid \$25 out of fund collected at this meeting.

R. W. MARTIN, *President*
R. S. MARTIN, *Secy-Treas.*

QUESTIONS FOR EXAMINATION OF APPLICANTS FOR CERTIFICATES OF LICENSE TO PRACTICE IN VIRGINIA, DECEMBER, 1911.

Physiology and Embryology.

Dr. R. B. James, Examiner.

Physiology.

1. What is the difference between an excretion and a secretion?
2. Give location and function of following named glands, mentioning which are secreting and which are excreting glands: lachrymal, sebaceous, mammary, and sudorific glands.
3. Give functions of red and white blood corpuscles. What is their relative proportion in human blood?
4. Explain the glycogenic function of the liver.
5. Patient suffering from compression of brain, with the right arm and leg paralyzed: In what portion of brain would you expect to find the causative lesion?
6. Explain the heat regulation of the body.
7. Describe the structure of the spinal cord.
8. Give the nervous and muscular mechanisms of the two forms of vomiting.
9. Mention four circumstances or conditions that influence the excretion of urine. Give reason for each.
10. Name the different structures of the eye that a ray of light passes through in order to make a visual impression on the brain.

Embryology.

1. What is a Graafian follicle?
2. Describe the circulation of the blood in a child before birth.

Surgery and Gynecology.

Dr. H. W. Dew, Examiner.

Surgery.

1. Describe operation of tracheotomy and of intubation of larynx. Give indications of each.
2. Give diagnosis and treatment of fracture of anatomical neck of humerus.
3. Describe in detail operation for radical cure of femoral hernia. What vessels would likely be injured during the operation?
4. Give etiology, diagnosis and treatment of pyonephrosis.
5. Give symptoms and treatment of acute obstruction of bowels.
6. Give differential diagnosis between loose bodies in knee joint and displaced semilunar cartilages.
7. Give treatment for suppuration in palm of hand. What is the chief danger in operation?
8. Give diagnosis and treatment of popliteal aneurism.
9. What is Pott's fracture?
10. Give early symptoms and treatment of hypertrophy of the prostate gland.

Gynecology.

11. Give etiology and treatment of retroflexion and retroversion.
12. Give etiology and treatment of acute and chronic salpingitis.

Obstetrics and Pediatrics.

Dr. Herbert Old, Examiner.

1. Mention the changes that occur during pregnancy in (a) circulatory system, (b) digestive system, (c) nervous system.
2. Give the signs and symptoms of pregnancy at the sixth month.

3. Diagnosis and prognosis of vesicular mole.
4. Mention the important diameters of the pelvis to be ascertained by internal pelvimetry, and give the methods for determining them.
5. Mechanism of labor in face presentations.
6. Diagnosis of puerperal (a) sapremia, (b) pyemia.
7. Differentiate between acute appendicitis, colic, and acute indigestion.
8. Etiology and early signs and symptoms of rickets.
9. Outline the feeding of a child during the second year.
10. Mention the variety of causes of vomiting in infants and children.

Anatomy and Histology.

Dr. O. C. Wright, Examiner.

Anatomy.

1. Give origin and distribution of internal maxillary artery.
2. Describe the eustachian tube.
3. Name the muscles of the forearm.
4. Describe the saphenous opening.
5. What is a synarthrodial joint and give example?
6. Describe the scapula.

Histology.

1. Give histological structure of liver.
2. Describe the malpighian bodies.
3. Give histological structure of blood vessels.
4. Describe the pores.

Chemistry.

Dr. J. N. Barney, Examiner.

1. Give preparation and properties of CO and CO₂, state medical importance of each.
2. Give the equations indicating change of grape sugar into alcohol, and alcohol into acetic acid.
3. Give preparation, properties and uses of formalin.
4. Give preparation of H₂SO₄.
5. Give preparation and uses of H₃PO₄.
6. Give preparation of CaO and Ca(OH)₂.
7. Name three bleaching agents, and tell how each acts.
8. Discuss arsenic.
9. Preparation, properties and uses of H₂O₂.
10. How is nitroglycerine made, and give properties.
11. Give chemical composition of cow's milk.
12. How is Hg(CN)₂ made, and give properties.

Practice of Medicine.

Drs. J. G. Rennie and E. C. Williams, Examiners.

1. Give clinical picture of gastric ulcer.
2. Name causes and give treatment of acute catarrhal laryngitis.
3. Give etiology and treatment of tetanus.
4. Give diagnosis of acute appendicitis.
5. Give diagnosis of chronic interstitial nephritis.
6. Give physical signs in mitral stenosis.
7. Define (a) chorea, (b) herpes zoster, (c) acute myelitis, (d) auditory aphasia, (e) oedema.
8. What conditions, in regard to dosage, would you be guided by in the initial dose of diphtheria antitoxin and in its repetition?
9. Name the more common complications of typhoid fever.
10. What symptoms, in a patient attending to business, with no history of previous illness, would lead you to suspect tuberculosis?

Pathology and bacteriology.

Dr. Lewis Holladay, Examiner.

1. Typhoid Fever: (a) In which of the lymphatic structures do the specific lesions chiefly occur? (b) Describe the pathological findings in the intestines; (c) Does the blood show leucocytosis?
2. Describe the pathological lesions which take place in a case of acute phosphorus poisoning. What organ suffers most severely?
3. Aneurism: (a) Name and describe three varieties; (b) which is the most important? (c) state what you know of the etiology.
4. Name and differentiate the three varieties of leucaemia.
5. Discuss inflammation, stating what pathological processes are found. Differentiate between active and passive hyperaemia.
6. Describe the pathological changes one would expect to find in the appendix and surrounding structures in a case of catarrhal and in one of gangrenous appendicitis, respectively. What information would a blood count give as to the probable condition of the appendix?
7. Describe three classes, giving an example of each, into which bacteria may be divided with reference to their need for oxygen.
8. Describe the growth forms of bacteria, and give an example of each.
9. What do you understand by terms: (a) chemotaxis? (b) opsonins? (c) agglutinins? (d) anaphylaxis? (e) phagocytosis?
10. Give a description of discontinuous sterilization, stating for what purpose it is employed. Distinguish clearly between antiseptics and disinfectants.

Medical Jurisprudence.

Dr. P. W. Boyd, Examiner.

1. What is adipocere?
2. What drugs or diseases producing death will cause the blood to remain fluid?
3. Name the diseases of the heart that may be the cause of sudden death due to natural causes.
4. How may the age be determined from the upper epiphysis of the humerus?
5. Give evidence of live birth in infanticide.

Hygiene and Preventive Medicine.

Dr. W. W. Chaffin, Examiner.

1. What are disinfectants? How classified? Where practical to use, what is the safest?
2. Given a house infected with diphtheria, scarlet fever or small-pox, give method of disinfection. What agents are best to use; how used, and what are the duties of the disinfectant?
3. What is the proper amount of fresh air that should be supplied to each scholar in a school room?
4. What is vaccination against small-pox? How should it be performed, and how often should it be repeated?
5. What are bacterins? What is the most important of this group so far known, and how should typhoid bacterin be used?

Therapeutics and Toxicology.

Dr. J. E. Warinner, Examiner.

Therapeutics.

1. Give a good rule for computation of doses for children, and state what classes of drugs are exceptions to this rule.
2. Give directions for preparing, and indications

for using, normal saline solution, and mustard bath.

3. Write a prescription for migraine containing not less than three drugs and guard against heart depression.
4. Name and average dose of one drug each most efficient in rheumatism, syphilis, gout, hook-worm.
5. Give dosage, mode of administering, and uses of urotropin.

Toxicology.

1. Give directions for emptying the stomach, and state upon what organs the specific effects of the following poisons are most shown: opium, prussic acid, strychnia.
2. Name three conditions that modify the action of a poison, and give treatment of acute alcoholic poisoning.
3. Give chemical and physiological antidotes for opium, strychnine, carbolic acid, iodine.

Materia Medica.

Dr. Robert Glasgow, Examiner.

1. What is meant by the term "Materia Medica," and what does it embrace?
2. What do you understand is meant by "Official" or "Officinal" preparations, and how are such preparations classified?
3. What is the composition of chlorinated lime; how and for what purpose is it largely used?
4. What are hemostatics? Name several, describing their mode of action.
5. What is paraldehyde, and what is its principal use?
6. Name the three most prominent drugs that are classed as "simple bitters," with the preparations of each, and state what is the preferable time for administering same.
7. What is cocaine; from what derived; its dose and effect—(a) locally, (b) internally?

Material Medica—Therapeutics and Toxicology.

Dr. Harry S. Corey, Examiner.

1. Give general characteristics of the calcaria group.
2. Give urinary symptoms of cantharis.
3. Give catarrhal symptoms of pulsatilla.
4. Name one antipsoric and discuss briefly.
5. Discuss arsenicum, baptisia and rhus tox in typhoid.
6. Differentiate ipecac and ant. tart. in respiratory affections.
7. Name two remedies in rheumatism, and differentiate.
8. Compare gastro-intestinal symptoms of lyco- and carbo-veg.
9. Give ameliorations and aggravations of bry- and kati carb.
10. Discuss briefly sphere of action of aconite.
11. Name four forms of mercurius and give brief description of sphere of action of each.
12. Give gastric symptoms of arsenicum and general symptoms indicating this drug.
13. Mention chief indications for bryonia in pneumonia.
14. State antidote to most alkaloids, and explain its action.
15. What are the chemical antidotes to carbolic acid?

Alphabetically Arranged List of Applicants for License to Practice Medicine, Surgery, etc., Who Passed Satisfactory Examinations Before the Medical Examining Board of Virginia During its Session, December 19-22, 1911, Lynchburg, Va.

- Anderson, Paul V., Richmond, Va., University of Virginia, 1904.
- Barco, Harry E., Portsmouth, Va., Howard University, 1911.
- Blaney, Lilton D., Baltimore, Md., Leonard Medical College, 1911.
- Burke, A. A., Brooklyn, N. Y., Medical College of Virginia, 1910.
- Boice, Harry W., Norfolk, Va., Columbia College Physicians and Surgeons, 1907.
- Crouch, J. H., Richmond, Va., Medical College of Virginia, 1911.
- Craig, T. E., Morristown, Tenn., Knoxville Medical College, 1904.
- French, Wm. J., Washington, D. C., George Washington University, 1905.
- Higgins, W. H., Richmond, Va., John Hopkins University, 1908.
- Hall, Jas. K., Richmond, Va., Jefferson Medical College, 1904.
- Ingersoll, R. S., Richmond, Va., University of Michigan, 1908.
- Ingersoll, Olive G. P., Richmond, Va., University of Michigan, 1908.
- Ivey, H. B., Disputanta, Va., University College of Medicine, 1911.
- Jackson, H. W., Norfolk, Va., University of Virginia, 1910.
- Lloyd, John E., University, Va., University of Virginia, 1901.
- Lewis, L. H., Elkton, Va., Medical College of Virginia, 1910.
- Marks, Wm. G., Naylor, Va., University of Virginia, 1908.
- McDowell, W. P., Norfolk, Va., University of Alabama, 1900.
- Moss, W. H., Charlotte, N. C., University of Georgia, 1892.
- Morton, Edward T., Washington, D. C., Howard University, 1909.
- Olds, Wm. J., Strasburg, Va., George Washington University, 1897.
- Parker, R. E., Chuckatuck, Va., Medical College of Virginia, 1911.
- Price, Susan A., Williamsburg, Va., Woman's Medical College, Baltimore, 1903.
- Pickett, Alice N., Marion, Va., Woman's Medical College, Philadelphia, 1909.
- Plunkett, F. O., Lynchburg, Va., University College of Medicine, 1911.
- Reid, C. M., Atlantic City, N. J., McGill University, 1911.
- Rondinella, Anna C., Hampton, Va., Woman's Medical College, Pa., 1899.
- Shaw, W. A., Loretto, Va., Jefferson Medical College, 1911.
- Shoun, J. G., Madison Heights, Va., Tennessee Medical College, 1908.
- Stout, H. I., Brandy, Va., George Washington University, 1907.
- Tredway, M. H., Emporia, Va., Maryland Medical College, 1911.
- Winn, W. M., Richmond, Va., Medical College of Virginia, 1911.

INSTITUTIONS REPRESENTED BY APPLICANTS WHO CAME BEFORE THE MEDICAL EXAMINING BOARD OF VIRGINIA FALL SESSION, AT LYNCHBURG, VA., DECEMBER 19-22, 1911.	Total Number of Applicants from each College	Total Number of Applicants Licensed from each College	Total Number of Applicants Rejected from Each College	Partial Examina- tion	Incomplete or Withdraw
Lincoln Memorial University.....	1	1	1		
Jefferson Medical College.....	3	2	1		
University College of Medicine.....	3	2	1		
Maryland Medical College.....	6	1	5		
College of Physicians and Surgeons, Baltimore.....	1		1		
American School of Osteopathy.....	1		1		
George Washington University.....	3	3			
University of Pennsylvania.....	1		1		
University of Virginia.....	1	1			
Medical College of Virginia.....	5	5			
University of Louisville.....	2		2		
Tennessee Medical College.....	1	1			
North Carolina Medical College.....	1		1		
Womans' Medical College, Baltimore.....	1	1			
Georgetown University.....	1				1
Howard University.....	4	2	2		
University of West Tennessee.....	3		3		
Leonard Medical College.....	9	1	7		*1
McGill University.....	1	1			
Knoxville Medical College.....	1	1			
Womans' Medical College.....	2	2			
Columbia College of Physicians and Surgeons.....	1	1			
John Hopkins University.....	1	1			
University of Alabama.....	1	1			
University of South.....	3		3		
Meharry Medical College.....	2		2		
University of Kentucky.....	1		1		
University of Michigan.....	2	2			
University of Georgia.....	1	1			
Baltimore Medical College.....	1		1		
Non-Graduates.....	4			4	
Totals.....	71	32	33	4	2

*Expelled, caught cheating.

Analyses, Selections, Etc.

The Use of a New Opium Preparation Before Anesthesia.

A. M. Hellman, New York, states his objections to the use of morphine as shallow, insufficient respiration; inactive or absent corneal reflex; contracted, inactive pupil; abnormally slow pulse during anesthesia, and an occasional morphine collapse; no effect on post-operative vomiting, but afterwards, restlessness, constipation and lessening of secretions.

Pantopon, first introduced by Sahli in 1909, is an opium preparation containing the total alkaloids of opium in readily soluble form and suitable for hypodermic injection in sterile solution. The dose is from gr. 1-6 to gr. 1-3. hypodermically, and may be safely repeated. Hellman, in investigating its use in fifty cases, gave in each an injection of gr. 1-3., combined with atropin, gr. 1-100, as nearly three-quarters of an hour before operation as possible. This was difficult, for some patients received the injection too early because of postponement on account of previous operations, and others at the last moment, the effects in the first instances wearing off too soon, and in the last not

manifesting themselves till near the end. Anesthetics used were ether and anesthol on an open mask.

Cases unaffected by the drug were, first, in which the patient was very alcoholic, and operation was started five minutes after injection; second, a bad phlegmon in an alcoholic, and in which scopolamine and morphine were likewise ineffectual; third, an interrupted anesthesia for ulcer of the tongue.

The quantity of anesthetic was little for the length and nature of the operations and the method of administration. It could have been less had the anesthetizers realized how much they could depend on the pantopon when the patient was seemingly only superficially anesthetized. In 31 cases there was no vomiting; 11 vomited but once and slightly; 8, two or more times.

Comparing the drug with morphine, respiration was less shallow and never insufficient; the corneal reflex was not affected; the pupils were contracted, but never rendered entirely inactive; the pulse was steadied, and there was not a single case of collapse. Post-operative vomiting was lessened, and will probably be rare when it is understood that the quantity of anesthetic may be reduced. There was no noticeable constipation or diminution of secre-

tions. Post-operative narcotics were not required so soon as previously. In later cases, Hellman has left off the use of atropine.—(*American Medicine*, January, 1912.)

A Premonitory Sign of Acute Infectious Diseases.

Any addition to the diagnostic resources of the clinic is to be welcomed, particularly in the case of the acute infectious diseases of childhood, in which an early diagnosis is a prerequisite to efficient isolation and prophylaxis. As yet there has been no means of recognizing these individually or even as a group during the period of incubation. Giovanni da Gaetani Giunta, in the *Archiv fur Kinderheilkunde*, Vol. LVI., Nos. 4 to 6, reports that he has observed a symptom in some of the above diseases, even in earliest childhood, and at a period in the disease when there is no functional disturbance and before there are any demonstrable lesions. This premonitory sign consists in a swelling of the lymphatic glands of the axilla, neck and groin, which is present during the incubation period of measles, scarlet fever, chicken-pox, mumps, diphtheria and whooping-cough. The study of a large number of cases showed that in earliest childhood the lymphatic glands in the above-mentioned regions are ordinarily not palpable, but under the influence of various morbid agents they undergo the following changes: They are absolutely insensitive, both on spontaneous or passive movement; they present a variety of forms, in the majority of cases attaining the size of a lentil; they are most palpable and movable in the inguinal region. There is no marked correspondence between the axillary, cervical and inguinal glands. The presence of this form of glandular enlargement may, according to the author, be regarded as a certain premonitory sign of an acute infectious disease. Neither age nor sex has any bearing on the occurrence of this symptom, nor does this vary with the variety of disease present. The presence of this sign depends upon neither inherited nor acquired predisposition. The sign does not indicate the severity of the infection or the degree of resistance in the patient.

The period of incubation of the infectious diseases has been termed by Royer the "silent period;" but, according to Giunta, this stage of the evolution of these diseases is one of

marked activity, involving important functional and physical changes in the lymphatic glands. These act as a barrier to the invading microorganisms and their toxins. Not only do they serve as organs of inhibition and filtration, but they also elaborate the leucocytes, and therefore play an important role in the fight of the entire body against the most diverse infections.

This function is a complicated one, is always exercised, but with each new infection is aroused to increased activity. Moreover, the toxic substances produced in the various parenchymatous organs during the initial activity of the infecting agents cannot fail to affect the lymphatic apparatus. The latter is therefore the seat of numerous and profound changes in its inner workings, which as yet have escaped the searching eyes of science. The enlargement that accompanies these changes during the period of incubation of an infectious disease is not, however, a constant phenomenon. When present it may be the result of a lymphatic hyperfunction caused by functional changes in innervation, or of a more greatly developed reactive power of the glands with respect to toxic influences. There is a third possibility, namely, the glands may be the seat of a permanent latent microbic infection which predisposes them to added infection and hence to enlargement. This latter possibility, however, is not regarded by the author as of any moment in the production of his premonitory symptom of infectious disease.—(*Editorial, Medical Record*.)

Prevention of Anaphylaxis.

O. L. Mulot, Brooklyn, says that it has been sought to avoid the accidents of anaphylaxis by addition of various substances to the serum, but that all such attempts have but ended in failures. Besredka, of the Paris Pasteur Institute, convinced that nothing was to be gained by further search along that line, attacked the problem from an entirely different point. He chloroformed previously anaphylactized guinea pigs and, while they were under narcosis, injected them with serum; no anaphylactic symptoms followed. He next administered a large dose of alcohol, and after the period of excitement was passed, injected the serum without untoward results. From a purely scientific point, these results were very instructive, but for clinical purposes entirely unavailable.

Now, the same investigator had observed

that when a guinea pig had successfully withstood a dose of serum and had recovered from anaphylactic phenomena, it then was in an anti-anaphylactic state, or we may describe it as having been vaccinated against anaphylaxis. Taking his hint from this, he began by injecting very small doses of serum. If a series of guinea pigs showed an anaphylaxis to a dose of 1-10 of a cubic centimeter, he injected 1-50, or even less, 1-100; then, a half-hour later, a dose of 1-10 c. c.; yet a little later, he injected 1 c. c., a dose ten times greater than the one at first fatal.

The rapidity with which this anti-anaphylactic state was established differed very much according to whether the vaccinating injection was made into the peritoneum or subcutaneously or intravenously. Thus, four hours were necessary for the establishment of anti-anaphylaxis after a subcutaneous injection; from one to two hours when the injection was made into the peritoneum or cerebrospinal canal; while if made intravenously, it occurred after a half-minute, and may be considered almost instantaneous.

Thanks to Besredka, we have but to observe his technic to avoid what, under certain conditions, may give rise to most deplorable results. By making the serum injections into the veins, first, a drop, a half-minute later, a few, then, after a little time, more, and so on, we may safely inject any size of serum dose without fear, the whole not requiring more than five minutes more than we now give to the same operation. The increased safety is well worth the extra time.—(*American Medicine*, January, 1912.)

Stimulation of Labor Pains by Pituitrin:

Stern (*Zeit. f. Gyn.*, 1911, 31) has used pituitrin in three cases for the purpose of starting labor. The first patient required induction of labor at the thirty-sixth week for laryngeal tuberculosis. The first injection of .6 c. c. was followed in twenty minutes by pains which increased in intensity with five-minute intervals, and lasted two hours. The following morning, a second injection gave a similar result. The third morning, two injections were given with an interval of two hours, and rhythmic pains ensued. Twin children were born in seven hours.

The second patient had severe nephritis, and labor was induced at the thirty-ninth week for

impending eclampsia. Six injections of 0.6 c. c. and one of 1 c. c. were given in four days, and a healthy child was born. The third patient had labor induced at thirty-two weeks, and seven injections of 1 c. c. were followed by weak but ineffectual pains. On the fourth day, a bag was introduced and remained six and one-half hours without effect, but an injection of 1 c. c. pituitrin excited strong pains in four minutes. Stern states that the contractions even after 3 c. c. are never of the tonic type.

Dr. Ellice McDonald has also used pituitrin, 1 c. c. hypodermically, in three cases of induced labor, at or near term, for large baby or moderate contraction of the pelvis. It was preceded in each case by introduction of the de Ribes bag. In two cases, uterine contractions started with a short interval and, in the third, within two hours. The pains persisted and were rhythmic.—(*Critic and Guide*, February, 1912.)

Bismuth-Iodine Paste In Discharging Sinuses.

After unfavorable results with Beck's bismuth paste and other methods usually employed, in cases of discharging sinus following carcinoma of the breast, Dr. L. D. Green (*Cal. State Journ. of Med.*, December) incorporated in the paste tincture of iodine, with the result that the sinus closed in ten days after three injections. He has since used it in a number of other cases with equally good results. The formula used is as follows:

Bismuth Subnitrate	30.0
Vaselin	60.0
White Wax	5.0
Paraffin	5.0
Tincture of Iodine	2.0

The iodine should be added after the other ingredients have been thoroughly mixed, and the paste well stirred whenever used.

As there is a possibility of absorbing too much iodine where the amount of paste used is large, the proportion may be reduced accordingly.—(*Ibid.*)

Editorial.

Consolidation of Medical Schools in Virginia Again Agitated.

For several years the question of amalgamation of the three medical schools in Virginia

has been discussed, advocates of such a plan having once or twice made considerable headway, when suddenly an obstruction in some form would be met with, and the subject receive a quietus for the time being. That consolidation, however, will not be downed is shown by the fact that it continues to bob up, first in one place, then in another.

Quite recently a measure was introduced in the Virginia House of Delegates, the object of which is to permit the consolidation of the Medical Department of the University of Virginia and the Medical College of Virginia, both institutions being owned by and being recipients of the State's bounty. A further provision permits the merging of any other medical school with the two named in the resolution. In this connection the University College of Medicine, which has always been dependent upon its own resources, is the only other such medical school in Virginia. The bill was referred to a committee which, we understand, has thus far not reported it back to the House, and may not do so.

Ever since the colleges of the country have required more advanced preliminary education for the study of medicine, as also a curriculum of not less than four years, the number of matriculates has steadily decreased, and many institutions—some of them most excellent schools, whose existence has depended upon fees obtained from the student-body—with attendance thus cut down, have suffered much from a financial standpoint. Colleges and universities with large endowments naturally suffer the least.

There are approximately 150 reputable medical colleges in the United States, and the prospects everywhere point to a continued reduction in matriculation. The greater relative cost per student of maintaining a medical school with attendance lessened beyond a certain mark is an accepted fact. It may well be asked, if efficiency is to be maintained, and the money heretofore received from students has been scarcely sufficient for the purpose, what can be done where the number is to be materially reduced? Either tuition fees must be generally increased, in which event attendance is again reduced, or else a union of schools would seem advisable.

In Virginia there are many reasons to favor amalgamation of the three schools into one big university, the expenses of which would scarcely exceed one-half of what it now takes to conduct the three separately. The medical institutions

of the State have each established a creditable standard, and, as now constituted, can furnish many teachers of exceptional ability to the proposed university, where all energies can be concentrated. The present laboratory equipments of the three schools, if brought together under one management, would provide elaborate facilities in this direction, while with a population sufficiently large—an essential thing to furnish clinic material of value—Richmond is naturally the logical point for such an establishment.

While, in some respects, we would regret to see the merging of our Virginia schools, we believe the time has come when the matter should be seriously considered, not only from the standpoint of economy, but likewise in the interest of a continued efficient medical curriculum.

With the consolidation of the Medical Department of the University of Virginia, the Medical College of Virginia, and the University College of Medicine, Virginia's position as a medical center, for all time, would be secured.

Virginia Health Department.

Encouraged by the results of last year's health campaign, and realizing that better health conditions prevail where the people are kept constantly informed on health matters, Dr. A. W. Freeman, representing the State Health Department, is, again this year, accompanying the Farmers' Institute Trains throughout the State, "preaching the gospel" of health, and giving instruction in the prevention of consumption.

The need of the above training seems apparent, when we note that small-pox is at present reported scattered in twelve counties in the State. Here the family physician may render assistance to the State Health authorities, and incidently, a little to himself, by urging upon his clientele the necessity of regular vaccination.

It is the purpose of this department also, with the co-operation of the State Anti-Tuberculosis Association, to begin in March a vigorous campaign against consumption. Special attention will be paid to the reorganization of the health forces and opening of tuberculosis dispensaries in cities and towns which have not modern health departments.

The Council on Medical Education and the Council on Health and Public Instruction,
Of the American Medical Association, will

hold their eighth annual conference at the Congress Hotel, Chicago, February 26-27, 1912, and the meetings will be continued on the 28th, if necessary to complete the program. Drs. Arthur Dean Bevan and N. P. Colwell are chairman and secretary, respectively, of the former, and Drs. Henry B. Favill and Frederick R. Green, of the latter. All of these officers are of Chicago. A number of addresses on interesting subjects are promised. On the evening of the 27th, Hon. Robt. L. Owen, U. S. Senator from Oklahoma, will give a public address on that most important and greatly discussed subject of the day, "The Need of a National Department of Health."

The Montgomery County (Va.) Medical Society

Held its last meeting in Christiansburg, February 5, 1912. Owing to the large amount of business before the Society, the subject for general discussion, "Quantity of Antitoxin to be Used in the Treatment of Diphtheria," was postponed until the next meeting, which will be held in April, the date to be set later. Thereafter meetings will be held quarterly. Drs. H. D. Ribble, Blacksburg, and A. M. Showalter, Cambria, are president and secretary, respectively.

New Work Undertaken by the Medical Society of the District of Columbia.

The Medical Society of the District of Columbia has recently appointed a committee on public instruction in medical matters, with Dr. Tom A. Williams, chairman. The work of this committee will be to issue weekly articles to appear in the Sunday papers, in which they will present simple hygienic facts and precautions. Infectious diseases, as in the past, will continue to be looked after by the Health Department of the District.

The Isle of Wight (Va.) Medical Association

Will hold its next quarterly meeting on March the 6th. Dr. W. L. Ward, of Moonlight, is president, and Dr. R. L. Seward, of Isle of Wight, secretary-treasurer.

Dr. G. Frank Lydston

Announces that he has in press a work on

"Sex Hygiene for the Male, and What to Say to the Boy." A review of the book will appear in this journal later. Advance orders for copies should be sent to Dr. Lydston, Reliance Building, Chicago.

Erratum.

We regret to note that Figure 2, appearing in the article by Dr. F. P. Smart, in our last issue, was inserted upside down, and that it was not accredited to Treves, according to copy.

St. Elizabeth's Hospital, Richmond, Va., Dr. J. S. Horsley's private surgical hospital, was opened for public inspection February 14, and patients were received the following day. The hospital is complete in every detail.

Dr. James R. Shacklette,

Formerly of Orlean, Va., has recently moved to Faber, R. D. 2, Nelson County, Va.

For Sale—Doctor entering upon practice of a specialty, desires to sell a lucrative practice in the Valley of Virginia. Roads and collections good. Address, "*Specialist*," care this journal.

Obituary Record.

Dr. Edward H. Murrell,

A member of the Medical Society of Virginia, and for many years one of the prominent physicians of Lynchburg, Va., died at his country home, just outside of that city, February 11, at the age of 87 years. He was a graduate in medicine from the University of Pennsylvania, in the class of 1868, and retired from the active practice of medicine about twenty years ago. His only child, the widow of the late Senator John W. Daniel, of this State, survives him.

Dr. James H. Hatch

Died at his home, Beaver Dam, Va., February 10, after a long illness as the result of paralysis. He was widely known and much beloved in Hanover and Louisa Counties, in both of which he practiced his profession for a long number of years. He was about eighty years of age, and had been twice married. Dr. Hatch was prominently known in his section as a Confederate veteran and a Mason.

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Original Communications.

TWO CASES OF TUBERCULOUS MENINGITIS IN INFANTS.*

By CHARLES A. PFENDER, M. D., Washington, D. C.

A brief presentation of two cases of tuberculous meningitis which came under my observation during the past year shall be attempted in this paper and those who came prepared to endure the reading of an elaborate monograph on tuberculous meningitis will no doubt find some soothing balm in my announcement.

Considerable difficulty in correctly interpreting the earlier contributions on meningeal inflammation was encountered in an attempted review of the vast amount of literature on this subject, for the reason, that the nomenclature in those days was far from uniform.

Duverney, as early as 1701, André de Saint Clair, in 1732, and others after them reported cases that had come under their observation and which were no doubt tuberculous meningitis, while Archambault, in 1763, referred to this disease in an article entitled "D'éclampsia ab hydrocephalo," which, as he says, "affects young infants of 3 to 5 years who are victims of a scrofulous taint." In 1768, Robert Whytt, of Edinburgh, published a monograph on "Observations on Dropsy of the Brain" which contained the first detailed description of the symptoms of this disease, and he showed, although ignorant of their tuberculous character, that they produced finally, in the majority of cases, a serous exudate into the brain cavities. The work of this author marks the era of concerted efforts to discover the true nature of the disease.

The proper location and classification of this malady was accomplished by Gerhard, of

Philadelphia, in February, 1834, upon the publication of a paper entitled "On Cerebral Affections in Children," based on a study of the disease made in the Children's Hospital in Paris. Not only did Gerhard report clinical findings, but he also rendered so graphic and correct descriptions of lesions encountered at autopsy that they remain to-day unmodified by authorities of more recent times.

In their reference to tuberculous meningitis Capuron and Chauvel employed the term "brain fever" (*fièvre cérébrale*); Guersant, in 1822, coined the name "granular meningitis," while Fabre and Constant introduced the designation "tubercular meningitis" in 1835, a year after Gerhard's masterful presentation of the disease. Water on the brain, or dropsy of the brain, acute hydrocephalus, basilar meningitis, and tuberculous leptomeningitis are some of the other synonymous terms under which this disease was described from time to time.

No truer words were ever spoken than the utterance of Hensch when he states that "tuberculous meningitis is one of the most common and most hopeless diseases of infancy and childhood." In a study of statistical evidence of meningeal inflammations prior to the discovery of the bacillus of tuberculosis we find, no doubt, a large number of cases reported which probably were not tuberculous, and such statistics are therefore of little value. Recent statistics are available, however, and at the Hôpital des Enfants-Malades in Paris, during 1894-1903, 73,739 patients were admitted; of this number 14,187 died, 518 from tuberculous meningitis, a mortality of 5 per cent. from this disease alone.

An instructive comparison of the frequency of tuberculous meningitis to non-specific meningitis is given by Comby, who found at autopsy 118 cases of tuberculous meningitis and only six cases of acute meningitis due to

*Read before the Hippocrates Society, Washington, D. C., January 11, 1912.

other infections (pneumococcus, streptococcus, meningococcus).

Infancy is in an exceptional degree susceptible to tuberculosis of the brain. From 1 to 7 years of age the cerebral development of the child is most rapid, the circulation of the pia mater most active, thus establishing a truly anatomic predisposition. At the same time the external coverings of the body are far more passable, the lymphatics are more viable to the germs and generalization of the tuberculous process goes on much more unrestrictedly than in later years.

It appears to be the opinion of many authorities that the disease occurs more frequently in males than in females, but late reports seem to indicate that circumstances, or environments, undoubtedly influence this factor. In France, for instance, where more girls than boys are born, females form a higher percentage of infections.

In a discussion of the source of infection, as well as the influence of heredity, Cornet states that "Since tuberculosis of the brain is especially frequent in the young, it follows that the source of infection is, as a rule, to be found in the individuals who most associate with the child, and thus heredity comes to be erroneously considered as the real factor of importance." I believe this statement to be rather too sweeping; it is no doubt applicable to those cases where parental tuberculosis can be safely excluded; when the latter is present, however, I incline to the belief that heredity does come into consideration either as an acquired congenital predisposition or as a congenital tuberculous infection. As yet we have no positive evidence of an inherited predisposition to tuberculosis. The theory is alive for the reason that in many cases observers fail to find any other satisfactory explanation for the presence of the disease, and consequently this hypothesis is established; an opinion which is probably shared by every member of this society. On the other hand, we find in the neighborhood of forty cases reported which demonstrate absolutely that placental transmission of tubercle bacilli to the fetus does occur, and in discussing tuberculous infection in children it is well to bear in mind the possibility of direct infection of the offspring by the tuberculous mother. Warthin says that under the influence of pregnancy an

old quiescent tuberculous focus is likely to become active and give off bacilli into the blood stream, and these are likely to fall out of the circulation in the large placental sinuses. Since the decidua and the chorionic syncytium are no more resistant to the bacillus of tuberculosis than other tissues are, active bacilli may cause placental lesion and from these lesions the bacilli may enter the fetal circulation. On the other hand, active tubercle bacilli may pass through the placenta into the fetal circulation without causing any placental lesions. Cornet's statement applies to my two cases, however, in so far that tuberculosis existed in members of the family, while the parents, so far as I know, were free from infection.

The pathology of this disease will not be entered into in detail. It is a recognized fact that an acute inflammation of the pia mater exists due to miliary tubercles on the membrane and on the blood-vessels proceeding from it, sometimes extending also to the corresponding membrane of the cord.

Primary tuberculous meningitis has been reported in a few cases, due to the fact that the primary focus could not be discovered elsewhere. Infection of the meninges is a secondary localization of the tuberculous infection, however, and is hematogenous. It may take place from pulmonary or bronchial foci, or from a neighboring focus, either by direct involvement or by growth along the lymphatics, as in tuberculous iritis, catarrh or tuberculosis of the middle ear, tuberculous mastoid, inflammatory processes in the nose, retropharyngeal abscesses, cervical gland infection, tonsillar inflammation, and the like.

Edlefsen found among 58 cases of tuberculous meningitis in children, 46 or 75 per cent. which presented the lesions of general tuberculosis.

In an able discussion of the symptoms of tuberculous meningitis Jacobi states that "The first signs of a diseased condition are of a very indefinite nature," and I would most emphatically punctuate this statement. The greatest variety of prodromal symptoms may be present prior to the development of the definite stages laid down by authorities. This was also true in both of my cases. After the disease is well advanced one recognizes the three classic

stages: Cerebral irritation, pressure, and paralysis, and a diagnosis is then not difficult.

In the beginning of the disease diagnosis is practically impossible, and, most commonly, the conclusions reached by a study of the symptoms which are present then are misleading even when careful consideration is given to the family record and previous history. Later, when the disease is well established, the diagnosis of tuberculous meningitis is clear, although tuberculous infection may only be suspected. Microscopic examination of the cerebrospinal fluid obtained by lumbar puncture very rarely reveals the organism on first examination, but inoculations into guinea pigs will confirm the diagnosis. Unfortunately the latter report will not come to hand in time to be of any value in therapy, for usually the child has died before returns are available, as it takes from three to six weeks for general tuberculization to occur in the animals inoculated.

The prognosis is uniformly unfavorable, practically all children with tuberculous meningitis die. Exceedingly few cases in which tubercle bacilli were found in the cerebrospinal fluid were cured, and I have found only one single case reported where all normal functions had been completely restored.

Thus far we have no successful therapy for tuberculous meningitis. Symptoms of irritation demand the administration of sedatives, and narcotics should be used freely, whenever indicated. Repeated lumbar punctures will give only temporary relief, and the same is true of the application of leeches over the mastoid. Operative measures, suggested by analogy to tuberculous peritonitis, have been tried, but invariably the surgeon was forced to surrender the patient to the tender mercies of the mortician.

Case 1.—M. S., white, 18 months old. Family history negative with exception of an uncle and aunt, in different families, suffering with pulmonary tuberculosis of advanced type. Frequent visits to these respective homes had exposed the child to infection. Past history: First born baby; easy delivery. Child was breast fed for several months when it became necessary to add modified cow's milk on account of insufficient mother's milk to satisfy the child. Since its birth the child had been afflicted with eczema facialis. I was called to see what could be done to relieve the excessive

itching which had caused the child to scratch its face to such an extent that the right side was almost entirely denuded of epithelium. The child at that time was about 14 months old. The mother stated that it had always been wakeful and never slept very long at a time, hardly ever longer than an hour, two at the most. In all other respects the child appeared healthy, vivacious and frolicsome. The inauguration of careful hygienic measures, the administration of arsenic combined with other tonic alteratives internally, and thoughtfully selected local applications succeeded, in less than six weeks, in entirely healing the facial eruption, and the parents were profuse in their gratitude, as this was the first time that the child had been entirely free of the blemish.

One day, while making a visit to a patient suffering from pulmonary tuberculosis, I was met at the door by the mother of the child in question, and on inquiry elicited the information that they frequently visited here. I felt it my duty to caution them and advise them of the danger in exposing the child to tuberculous infection, and suggested an interruption of these visits until the child was older. Somehow, it appeared to me that my exhortations were not considered very seriously, and I made it a point to bring the matter up again at the first convenient opportunity and was told that special care was exercised in not exposing the child to the patient and they hardly thought that infection was likely to occur, if the patient did not come in contact with the baby. From outside sources I have since then been informed that the child was fondled a great deal by an aunt who was also suffering from well-advanced pulmonary phthisis. So we note that ample opportunity for infecting the child had prevailed.

A month or more had transpired when I was called again to see the child. It had become restless, was awake every night, and seemed never to sleep. Couldn't I give her something to make her sleep? I made a careful physical examination, but found nothing further than a very slight exaggeration of the reflexes. After eliminating the possibility of gastro-intestinal disturbances I resorted cautiously to anodynes. These failed to relieve the child, however, and I soon abandoned them.

A trip into the mountains of Virginia was

planned for the benefit of the little one, and while on this outing the child suddenly became very ill. A prominent physician of Lynchburg was called. When he arrived the child presented the clinical picture so common in children in the summer—to wit: rise of temperature to 105° F., rapid pulse, vomiting and green watery stools, with considerable prostration. There was no history of dietetic indiscretion, but the heat at that time was rather intense. Calomel and other intestinal antiseptics were administered, but the child improved so little that it was decided to return to Washington, and the child improved with the change. Two or three days after return to the city I was sent for by the mother who was very much worried because the child was doing something it never had done before—*she slept constantly*, except when she roused to call for milk. When fed she would immediately return to a prone position, flex the thighs on the body and fall asleep almost instantly. No other symptoms had been noted.

Present Status: May 23, 1911.—Fairly well-nourished and well-developed child of delicate appearance. Shows no signs of having been sick. Examination of the eyes, ears, nose and mouth reveals nothing abnormal. The tonsils are slightly enlarged, but not markedly so, and the tongue has a light white coat. The submaxillary glands are slightly enlarged. The cervical nodes are normal. The thorax is well developed, shows no signs of rickets; the heart and lungs are carefully examined with negative results. The abdomen is not distended, apparently normal, nor is the liver enlarged. The spleen and kidneys are not palpable. Genitalia and anus normal. Both upper and lower extremities present normal appearances. The skin over the entire body and face appears healthy; the eczematous patch on the face is, if anything, more nearly normal than ever before. Nervous system: Pupillary reflexes not perceptibly retarded; the patellar and plantar reflexes are slightly exaggerated; Kernig's and Babinsky's signs absent. There is no rigidity; no opisthotonus. Temperature 102° F., pulse 120, and strong, respirations 24 per minute. Provisional diagnosis: Gastro-intestinal toxemia. Treatment accordingly. Some improvement followed. Daily observation failed to disclose any other symptoms.

On the fifth day, May 28th, I thought I detected signs of pulmonary infiltration in the latero-mesial third of the left lung. Temperature 101.5° F., pulse 124, respirations 36. Up to this time the respirations had ranged from 24 to 28 per minute. Slight rigidity of the cervical muscles was observed for the first time. Kernig's sign doubtful. Babinsky's sign was present in right toe only. Tuberculous meningitis was suspected. The condition remained unchanged for several days. Constipation was the rule and laxatives were required.

On June 1st, about two weeks after onset of illness, and on the eighth day since I had the child under observation, delirium and convulsions suddenly occurred early in the morning. They were so pronounced that large doses of morphia were necessary to control them. Temperature 105° F., pulse 150, respiration 40. Examination later in the day revealed bilateral internal strabismus; loss of pupillary reflexes; Kernig's sign well marked; Babinsky's sign present in right toe only. The abdomen slightly sunken, approaching the characteristic scaphoid appearance. The cervical rigidity became more pronounced, but there was no opisthotonus. Treatment was symptomatic: Good nursing, morphia, ice bags, fresh air, darkened room, liquid diet, etc.

June 2d.—Condition unchanged. Consultation with Dr. Edgar P. Copeland. Lumbar puncture was decided upon. About 8 c.c. of clear fluid was withdrawn under moderate pressure. The patient relaxed while fluid was being removed. The strabismus disappeared to some extent, and natural sleep supervened for several hours. During the night the respirations began to get irregular and atropine 1-200 of a grain was administered hypodermically every two to four hours as needed.

June 3d.—The temperature ranged from 100° to 105° F., the pulse was still strong, beats 150 to 200 per minute; respiration continued irregular and gradually approached the characteristic type of breathing in this disease; a few rapid respirations in quick succession then an interval of rest, a deep sigh, and return to rapid breathing. The respirations ranged from 18 to 28 per minute. The rigidity of the cervical muscles remains the same. Convulsions are constant unless con-

trolled by ice locally and morphia hypodermically.

June 4th.—The temperature alternates from subnormal, about 96° F., to 107° F.; pulse 200, rapid, feeble, but not intermittent; respirations 6 to 18 per minute. At times there is complete cessation of breathing for one to two minutes accompanied by marked lividity and then return to more rapid breathing. Opisthotonus is noted for the first time since the beginning of the disease.

June 5th.—The condition remains unchanged. Physical functions are arrested.

June 6th.—The apnoeal periods are more frequent. At one time during the day the temperature fell as low as 94° F., but rose to 108° F. before midnight. Pulse 180-240, irregular and weak. Respirations 3 to 8 per minute. A convulsion occurred in spite of large doses of morphia administered at regular intervals and the child died at 2 o'clock the following morning.

Dr. Washburn, of the Bureau of Animal Industry, kindly consented to make an examination of the cerebrospinal fluid. A microscopic examination did not reveal the tubercle bacilli in the fluid, and guinea pigs were then inoculated with the material. These pigs were killed in about six weeks after inoculation and gave a typical picture of generalized tuberculous infection, thus confirming the diagnosis.

Case 2.—Mildred M., white, aged 6 months. Family history: Paternal aunt died from pulmonary tuberculosis. Paternal uncle at present in last stages of pneumonic phthisis. Past history: Child was delivered in part before arrival of attending physician, and remained with cord tightly wrapped around the neck for half an hour. The mother states that respiration has been irregular since birth, and that the child had frequent attacks of vomiting during the first three months of life. The vomitus was composed of green biliary matter and mucus. The child is breast fed. This child also takes only short naps at a time, never over two hours, and is fretful and restless.

About the middle of July, 1911, she developed what appeared to be a gastro-intestinal indigestion: there was vomiting and many greenish-yellow stools. The child came under my observation July 23d. A careful physical examination revealed nothing more unusual

than would justify the diagnosis of gastro-intestinal indigestion, which was made and the necessary treatment provided for. There was some improvement, but the child continued to be restless and unusually fretful, and, as the mother said, "would roll its eyes so" that I was called in again three days later.

Present Status, July 26th.—The child is fairly well nourished and normally developed. The anterior fontanelle is open, bulges slightly, and measures 3 c.m. by 1.75 c.m. Eyes are staring, but can be riveted to attention. The pupillary reflexes, both consensual and light, are about normal. Pupils are not unequal. The ears, nose and throat show nothing out of the ordinary. Tongue is slightly coated white. No odor from the breath. There exists bilateral cervical node enlargement, which is more pronounced on the right side. The thorax is well developed and shows no sign of rosary. Heart and lungs normal. The abdomen is distended; it extends 1.5 c.m. above level of sternum. A tympanitic percussion note is observed. The liver is enlarged and extends within 2.5 c.m. of the umbilicus. The spleen is not enlarged; the kidneys are not palpable. Genitalia and anus normal. The extremities show no epiphyseal enlargement and are well nourished. Nervous system: Patellar reflexes are slightly exaggerated; plantar reflexes almost entirely absent; no Babinsky or Kernig's sign. No cervical rigidity, but a slight tendency to retraction of the head. Temperature 101° F., pulse 140, respiration 30. In the absence of any definite signs a provisional diagnosis of tuberculous meningitis was made.

July 27th.—General condition unchanged. Albumen water, 6 per cent. lactose water, and cereal jelly was given and completely controlled the vomiting. Intestinal antiseptics and calomel improved the stools. Temperature 100° F., pulse 150, respiration 40.

July 28-29th.—Very little change. The child slept well during the night, but awoke with a peculiar whining cry which has continued throughout. Kernig's and Babinsky's signs absent; the plantar reflexes are now less dormant. The child refuses to nurse the breast. Temperature 101° F., pulse 150, respiration 45.

July 30-31.—Condition worse: slight opisthotonus; pupillary reflexes sluggish; Kernig's

sign distinct; Babinsky's sign absent. The child still continues its whining cry, with intermissions of perhaps 30 minutes in duration. Temperature 101° F., pulse 150, respirations 50.

August 1st.—Signs of increased pressure. Opisthotonus moderate in degree. The cervical rigidity is not so marked as on former days. Bilateral convergent internal strabismus. The lower extremities are rigid. The child whines continually and appears unconscious. Takes nourishment well from bottle, but refuses the mother's breast. Two well-formed, yellow stools during the day; no albumen in urine, no casts. Abdomen is no longer distended, but by no means scaphoid. The temperature is 102° F., pulse about 200, regular and strong, respirations 30 to 60 per minute, irregular. The conjunctival reflexes are absent.

August 2d.—Child spent a very restless night and refused to take the mother's breast. During the day it rested better, remaining quiet for two to three hours at a time. Involuntary twitching of the lower extremities observed; pupillary and conjunctival reflexes are lost.

August 3d.—Nurse reports that the child was even more restless than on the preceding night. A slight convulsion occurred early in the morning and lasted about ten minutes. Opisthotonus is not marked, and there is only moderate cervical retraction. The eye reflexes are unchanged. The fontanelle bulges considerably. Babinsky's sign is present in right foot; Kernig's sign is pronounced; the abdomen is moderately distended. The child had two bowel evacuations of good consistency since last visit the evening before. Temperature 105° F., pulse 180, respirations irregular, sighing, with apnœal periods. Auscultation of the heart during one of these apnœal spells, lasting 90 seconds, showed a gradual reduction in the frequency of beats from about 240 to 100; at that moment cyanosis was very marked and appearances all indicated that the child was dead, but respiration was taken up again and the child returned to its former condition. The respirations varied from 1 to 30 per minute. Lumbar puncture was made. The internal pressure was sufficient to force the cerebrospinal fluid out for a distance of four feet. In all about 30 c.c. of spinal fluid

was obtained. Relaxation took place during the withdrawal of the fluid; the child quieted down and ceased to cry. The temperature dropped to 99° F., the pulse to 140; respirations became deeper and more regular. The fontanelle was now sunken. The strabismus in the left eye had entirely disappeared. The child remained in this condition for three hours when it became imperative to resort again to the ice cap and morphine to control the fever which had risen to 106° F., while the struggling had also returned. Morphine sulphate 1-25 of a grain every three hours and atropine 1-200 of a grain every two hours sustained the patient in comparative comfort for about ten hours after lumbar puncture when death mercifully intervened.

The cerebrospinal fluid obtained by lumbar puncture was examined microscopically for tubercle bacilli, but none were found. I had no guinea pigs at my disposal at the time and did not inoculate the material, largely because I felt no need of confirming my diagnosis. It is of interest to note that the uncle of this child died two weeks later in the final stages of pulmonary phthisis.

These two cases present no unusual features, in fact, they merely go to support our present knowledge of this disease. The first case was ill only nineteen days, although the prodromal stage lasted for months. Delirium set in on the thirteenth day and six days later the child died. In the second case we have only the statement of great restlessness for several months, then the apparent gastro-intestinal indigestion, which lasted for four days before any further signs appeared. From the time of onset of definite signs and symptoms to the time of death seven days transpired, the total duration of the illness being practically eleven days.

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LEG AMPUTATIONS FROM THE STAND-POINT OF UTILITY.*

By L. A. THOMPSON, M. D., National Soldiers' Home, Va.

Major and Surgeon, U. S. A.

In former years, when one lost his leg from any cause whatever, a peg was substituted for the living member, and the shape of the stump

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and the manner of amputation were not of serious consequence.

Recently, however, much thought and skill have been devoted to the making of artificial limbs that are comparatively light, comfortable and useful.

The weight of artificial legs has been greatly reduced without sacrificing strength, and ankle joints are now constructed that are extremely simple and efficient.

In this age of machinery and rapid transportation, accidents to the feet and legs have greatly increased the number of leg amputations. None of us know when we shall be called upon to perform this operation, and we should be prepared to perform it well, in order that our patient, for the remainder of his life, may be assured of ease and comfort, rather than pain and misery.

Bearing in mind, therefore, that the responsibilities of the surgeon have greatly increased, before he attempts a leg amputation the operator should thoroughly inform himself concerning the construction of an artificial leg; where the weight is to be taken; what is most desired in a useful stump; and what should be avoided.

Regarding the construction of the artificial leg to be worn, I believe the most satisfactory ones to-day are made of willow. They hold their shape forever and are lighter than those made of any other material. This latter feature is of considerable importance, for to the wearer, any artificial leg, no matter how light, seems much heavier than the natural one.

It should be made with an ankle joint, which form of construction gives greater ease to the stump, and is conducive to more natural walking.

While some who have worn artificial legs for several years are able to dispense with the thigh corset, they are greatly in the minority, and at least the first leg worn should always contain this feature, not so much to assist the stump in bearing the weight of the body, but to guide the stump in its socket, and relieve it of side strains.

It is surprising how many people are of the opinion that the weight of the body is taken on the end of the stump. Nothing could be further from the truth, the weight being almost entirely taken on the surface of the internal tuberosity of the tibia and adjacent por-

tions, extending downward somewhat for a distance of from two to four inches; the remainder of the stump is used solely as a guide for the artificial leg.

The ideal stump, therefore, is about seven to eight inches in length, large at the joint and rapidly tapering toward the end. It should be free from all adhesions, the skin being movable at all points, and containing as little scar tissue as possible, and that only on the end.

Many methods have been devised for amputating at this point, some of them being entirely unsuited to the wearing of an artificial leg, and are therefore to be avoided by the modern operator.

Circular skin flaps have been used. With this flap a smooth end is impossible. There will be considerable puckering at the edges and adhesions at the center will most likely occur. When weight is taken on a stump of this sort, with extensive adhesions at the end, the sensation to the wearer is little short of torture.

The large posterior skin flap has also been quite popular with some. While this method gives a smooth end, it has this marked disadvantage: The line of union will extend across the tibia just above its end, and the skin of the flap being considerable thicker than that to which it is united, a marked ridge will be the result. The skin covering the tibia, above all other portions of the stump, must be free from scar tissue. The posterior muscle flap has all the disadvantages of the posterior skin flap, besides giving a large flabby stump at the very place where it should be smallest. If a stump is larger at the end than it is a short distance above, a pulling sensation will be experienced each time the artificial foot is raised from the ground.

The operation which it is believed gives the best stump from the standpoint of utility is the bilateral skin flap. The incision should begin about seven inches below the knee-joint and one inch external to the crest of the tibia, ending about one-half inch internal to the median line on the posterior surface, the internal flap being slightly longer than the external. By following this procedure, the line of union, instead of extending across the end of the tibia, will lie between the ends of the two bones, thereby reducing to a great extent the tendency toward adhesions at this important point. The

flaps, consisting of skin and subcutaneous tissue, should be dissected back to the point of the beginning of the incision and the muscles divided straight across.

Periosteal flaps should be made for both bones, the tibia finally being amputated on a line with the muscles, the fibula about one-quarter inch higher up. Care should be taken that the edges are smooth and that the internal and anterior edges of the tibia and the external edge of the fibula are slightly beveled.

The arteries being ligated with ten-day catgut and the nerves pulled down and divided as high as possible, the wound is then closed with interrupted sutures. Drainage consisting of a few strands of catgut or a very small wick of gauze should be inserted for about one inch in the posterior end of the wound to prevent the possible formation of clot. This may be removed about the second day, the stump being kept in an elevated position for one week.

The healing of the wound by first intention is imperative. By using the utmost precaution to prevent sepsis and clot formation this result can be readily obtained, and the percentage of adhesions will be very small.

This operation is not a hard one to perform and can be well done by any surgeon who can do any other operation well.

The comfort and usefulness of this type of patient depend so much on the operator that it behooves us to study this question not only from a surgical, but also from a mechanical standpoint.

Let us contrast to ourselves two radically different types:

One man with a poor and painful stump will go limping through the remaining years of his life, bearing a great portion of his weight on a cane. He is usually irritable and his sphere of usefulness extremely limited.

Another man with a good stump and a well-fitting leg constructed by a skilled mechanic will walk briskly down our streets from morning till night, defying detection by the most acute observers.

It remains to a great extent with us to which class our patients will belong.

Two new hospitals just opened in Virginia are the Olivia Jones Hospital, the private hospital of Dr. H. E. Jones, of Roanoke, and the St. Andrew's Hospital, in Suffolk. They are both excellent in every detail.

FASHIONS IN TYPHOID—A REVIEW OF 239 CASES OF TYPHOID FEVER IN THE UNIVERSITY OF VIRGINIA HOSPITAL.*

By JOHN STAIGE DAVIS, M. A., M. D., University, Va.
Professor of Practice of Medicine, University of Virginia.

As the vast majority of typhoid fever cases treated in this hospital since its foundation were kindly referred by members of this Society, I thought it would be of interest to give you a general report of such cases, with especial reference to their peculiarities or "fashions."

From the date of opening, April, 1901, to the end of last year, December 31, 1911—10 years and 9 months—we have had 239 cases with 19 deaths, a mortality of 7.9 per cent. Of these, five were moribund when admitted, two indeed being sent in for laparotomy after perforation, which, if deducted, would leave a net mortality of 5.9 per cent. Their ages were from 5 to 61 years.

Of the 239 cases, 159 were white, 58 females with three deaths and 101 males with six deaths, and 80 colored, of whom 44 were women with six fatalities and 36 were men, four of whom died. A colored woman thus stands the poorest chance and a white one a little the best.

The causes of death were as follows:—

Perforation carried off eight. There were nine cases of this accident, six of whom were operated upon with one recovery and that in a white man. Of the others, two were moribund on admission; one showed three distinct points of rupture. Five of these cases occurred in 1909, which was accordingly known as "perforation year."

Of the remaining deaths, *pneumonia* (croupous) claimed four—(all whom it attacked); *hemorrhage* two, one patient passing away in hematemesis, and the other was carried off by bleeding from bowel after successful laparotomy for perforation as shown by autopsy, which disclosed no peritonitis. This was in November, 1906. *Toxemia* killed five.

Hemorrhage occurred in fourteen cases (5.8 per cent.) and varied from 1 to 20 individually, ten of whom died, but only one, as stated, directly from this cause alone. This symptom was particularly marked in 1907, when we had one hemorrhagic case with recovery. There

*Read before the semi-annual meeting of the Piedmont Medical Society, held at the University of Virginia, January 20, 1912.

were also two cases of profuse epistaxis, requiring plugging of the nares.

As to *temperature*, hyperpyrexia up to 108° F. occurred twice, both cases proving fatal, but several recovered from a fever of 105.5° F. and one from 106.2° F. This symptom was apparently "the thing" in 1908.

Intermittent temperature in the first week was observed in two cases, adding materially to the difficulties of diagnosis. One favorable case never had a temperature over 100° F. throughout. The *pulse* in the first week was invariably under 100, and in many cases below 90. In several it never exceeded 100 at any time.

Tachycardia and protracted heart weakness were met with in six cases and greatly retarded convalescence.

Tympany was reported as troublesome in eleven cases and mainly in the earlier years of our work.

Nausea and vomiting were rare and indicated either nephritis (once) or gall-duct infection (twice).

Constipation was met with most frequently and *diarrhea* troublesome only eight times in the series.

Appendicitis occurred twice, once at the onset and the patient was operated on under the impression that it was an uncomplicated case and great anxiety followed the development of typhoid, which at first resembled sepsis. The subject was a graduate nurse who recovered finally. The other came on in the third week and was taken for perforation, but the operation, successfully done, showed the true condition and the case went on to recovery. Ulcers were found in the appendix. Two cases were ravenously hungry throughout and two others probably fattened during their stay.

Parotitis was very rare—only one case and that fatal—our exemption being attributable to the excellent care our nurses take of the mouth. To digress a moment I would say that the parotid was much affected in 1898, a large proportion of the cases in this section that year showing this symptom, but most recovered. This was before our opening here and is not strictly belonging to this report.

Three cases showed *jaundice*, of which two were fatal.

Polyuria was fashionable in the years 1904-05, when not a single death occurred and I

then came to regard it as of very favorable prognosis. It was probably due to forcing water successfully. Of twenty-six cases, seven showed it in amounts up to 80 ounces per day. *Nephritis* was reported twice.

But one *bed sore* is to our charge, and that in a violently delirious case that had to be mechanically restrained, but even here a good recovery resulted. This case was our only example of *chills*, of which he had many throughout his illness. (Two others came in with decubitus, but were soon relieved.)

Profuse and almost confluent *eruptions* occurred in two cases, and once it was hemorrhagic. *Sweating* was commented upon three times. A predilection for *phlebitis* was observed in 1910, when four cases occurred—all we ever had here.

As to the *blood*, leucocytosis varied from 4,360 to 18,800—average 5,000. Positive *Widals* were obtained in about 90 per cent. of cases and *blood cultures* (only made for last two years) in almost as many. The culture is more prompt than the serum reaction, which may fail even in genuine cases.

In 1909-10 *large spleens* were conspicuous, especially in one family of which we had eight members, who quenched their thirst at a spring under the back porch.

Of nervous complications, *delirium* and *coma* were rare; *headaches* were very common, but not so frequently occipital as books represent.

Neuritis occurred in two cases; tender toes and fingers in one.

Periostitis was seen once (of tibia), necessitating operation later.

Deafness was reported twice, and both cases died. *Paranoid psychosis* was met with once in convalescence. One case of epilepsy was relieved by the illness and had had no attack one month later.

Reinfection was reported in ten cases (4.8 per cent.), varying from 1 to 5 individually, indeed, the man with five to his credit we were grooming for the record in this line, when he suddenly relinquished the race and stayed normal.

Most reinfections were noted in the first three years after opening, though there was a tendency to persistent evening and even nocturnal rise of temperature observable in the last year—protracting convalescence. Constipation, errors in diet and exertion accounted

for most of them. One case was twice admitted for genuine attacks after an interval of six years.

As to *duration*, our shortest successful case lasted eight days—the patient feeling all responsibilities discharged by a positive Vidal, while our longest lasted 101 days.

The time limit of this paper will not permit any discussion of the therapeutic side of this subject further than to say that we are more generous than formerly in the matter of diet, feeding at two-hour intervals in the day and, if necessary, forcing water. No routine medication is practiced, and the bed-bath has successfully replaced tubbing.

Nor have we tried the anti-typhoid vaccine as a curative measure, though all of our nurses and a few students have been immunized with it.

DISCUSSION.

In discussion of this paper, Dr. Harry T. Marshall further emphasized the occurrence of "fashions" in the symptomatology of this disease, and made suggestions as to their causation. Possibly different strains of bacilli, variations in virulence, or peculiarities of existence outside the body might be responsible.

HYDROPHOBIA—REPORT ON FOUR HUNDRED PATIENTS TREATED AT THE PASTEUR INSTITUTE OF VIRGINIA.

By S. B. MOON, M. D., Richmond, Va.

Director of The Pasteur Institute of Virginia; Professor of Pathology, University College of Medicine, etc.

Among the diseases which affect man, hydrophobia is perhaps the most peculiar, and certainly one of the most interesting. Known and reported among the ancients in the Eastern continent, it has spread with man and the domestic animals to America, where it is now common among the latter, but, by careful quarantining of all dogs in transit, has been prevented from entering Australia, in which continent the disease has never occurred.

The rodents, such as mice, rats and rabbits, seem to be the most susceptible of all animals; ungulates, as horses, cattle, and swine, are also extremely so; carnivores, as wolves, cats and dogs, come next; while fortunately man is naturally endowed with considerable resisting power, enabling him to escape without treatment in most instances, even when infected. Were it not for this fact, death from hydrophobia would have been far more common, its exist-

ence never denied, and its symptoms, diagnosis and treatment more precisely taught and understood among the profession. Through the carnivores the disease especially propagates itself, exciting in them at times a peculiar frenzy or fury, which causes them to travel long distances and attack without provocation almost any living object which stands in their pathway.

The prophylactic treatment, devised through the brilliant investigations of Louis Pasteur, and given at the present day with but slight modification of his original method, is certainly one of the most effective preventives of disease among men, failing to immunize, if time be allowed, in only one case out of about three hundred treated. Among patients coming late for treatment, or those bitten about the head, in whom the incubation period is shorter, sufficient time for immunization may be wanting, as it appears that about five weeks are required to render the process complete.

But little is yet known as to the active cause of hydrophobia, though it is certainly infectious and due to an organism. However, it seems probable from autopsies done on persons exposed to the virus and dying of some other intercurrent malady, that all such actually receive the infection and exhibit its effects, as demonstrated by the microscope. It is only in the more susceptible, or those receiving an extremely virulent or copious infection, that the nervous system is overwhelmed, and the terrible symptom complex appears.

Thus there appear to exist, in a person exposed and under treatment, three processes: (1) The active growth of the infectious agent, with production of toxins or irritants affecting especially the nervous system, and causing the degeneration of neurons; (2) the reaction of the system, or natural process of immunization, with probably the production of antibodies, usually sufficient to offset the disease process, and prevent the outward exhibition of signs and symptoms; (3) the artificial immunization, due to the treatment, which either stimulates the tissue cells in such manner as to call forth antibodies, or otherwise aids the natural immunizing process in some unknown way. While the usual result of these three processes is complete immunization, it is interesting to note that in rare instances a peculiar form of the disease appears after treatment, which resembles

Landry's paralysis, and is practically never fatal. Such cases are reported from time to time, but we have never had the opportunity of seeing one, as none have occurred in our practice.

The 400 cases treated at the Pasteur Institute of Virginia, since its establishment in 1902, can be only partially reported, as 100 of our case histories were destroyed by fire in January, 1910. The 300 here included came from Virginia, North Carolina, South Carolina, Tennessee, and West Virginia. They may be classified as follows:

White, 288; colored, 12. Adults, 151; aged two to fifteen years, 144; under two years old, 5. Infected by dog, 266; by cat, 22; by cattle, 5; by horse, 6; by pig, 1. Time elapsed after exposure till treatment, within ten days, 284; from ten to twenty days, 8; longer, 8. Locality of wound, through clothing, 76; on bare extremities, 185; on face, head or neck, 39.

Diagnosis of the disease was made by autopsy and microscopic examination in 171 cases, by the clinical history in 117, and in 10 cases the patients desired treatment although the diagnosis was doubtful. In a considerable number of cases the diagnosis has been confirmed by the biologic test, inoculation of an animal with brain of the one autopsied.

One case is worthy of note from the fact that, so little indication of rabies being exhibited in the dog, the patient was advised to wait, and had to be summoned for treatment when the inoculated animal became ill with typical hydrophobia.

In another instance, that of a young man bitten by a horse, the animal exhibited such fury and other characteristic signs of rabies that the patient was advised to take treatment although no microscopic indications of the disease were discovered at autopsy of the horse's head. The hare inoculated with this animal's brain remained well, but the patient contracted blood poison from the bite, with an active cellulitis extending from the hand to the axilla, necessitating hospital treatment. From this wound a pure culture of *staphylococcus pyogenes* was obtained, possibly being the same organism as that which caused the horse's death.

In most cases the diagnosis can be quickly and surely determined by examining smears

made from the brain. Should the Negri cell inclusions not be found in these, after careful search, part of the brain is preserved for the biologic test, the vagus ganglion is obtained to be sectioned for microscopic examination, and tubes are inoculated from the brain substance in order to determine the presence or absence of bacteria which might have caused meningitis, this disease sometimes simulating rabies in the domestic animals. The absence of Negri cell inclusions should not be accepted as conclusive evidence against rabies. In one of our recent cases none were found after prolonged search, although the dog had exhibited typical signs of furious rabies, and a rabbit inoculated with its brain went down promptly with hydrophobia.

The public is now fairly well informed with regard to hydrophobia in domestic animals, the danger from bites, and the necessity of prompt treatment. Yet it not infrequently happens that a person bitten does not realize his danger until some animal, also bitten by the same dog, dies of the disease. We have treated three children bitten by a dog which also bit a cow, a mule, and a colored boy, all of whom died with typical hydrophobia before the parents of the children became aware of the risk they ran. In one of our recent cases the patient was not concerned about himself until, twenty days after being bitten, he noticed the death of a pig, also attacked by the same dog. The dog's body, in this instance, had been buried, but remained in fair condition, and we were able to find typical cell inclusions of rabies in its brain three weeks after its death.

Of the 400 patients treated, three have died of hydrophobia. Two of these were among the 39 bitten about the face, head, or neck, and they had multiple severe wounds upon the face. On this account the disease came on before it was possible to render them immune. The third was bitten on the hand, and died about four months afterward, although another man bitten by the same dog, and also treated, remained well. Thus we record one failure to immunize among the 400 treated. The usual mortality in face bites is eight to fifteen per cent. of those treated, and in other cases about one in 300 treated. Two persons, who were advised to take treatment after being bitten, declined it, and afterward presented themselves with typical signs of hydrophobia, dying a few days afterward.

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ETIOLOGY AND PATHOLOGY OF ACUTE RHEUMATISM.*

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The term "rheumatism" has been made, in the past, to cover a vast number[®] of diagnostic inaccuracies, and even to this day we often hear of painful conditions, whether muscular, nervous or arthritic, spoken of loosely as rheumatism. We think it would be well, in the interest of eliminating confusing nomenclature, to recognize but one form of rheumatism, and that the type usually referred to either as acute articular rheumatism or rheumatic fever, in view of the fact of its being, according to investigators, an etiological and pathological entity.

The *etiology* of rheumatism has for centuries, we might say, furnished medical men a source of argument. From the fact that there have been no less than five theories advanced as to its direct causation, with each having its advocates; and that even to-day medical opinion is not altogether as unanimous as it should be, it can be seen how great this subject has been for debate. As we find this great diversity of ideas concerning the exciting cause, we find on the other hand, students of the disease to be fairly well agreed as to the causes that predispose.

Sir William Church, of 943 cases studied, found 83 per cent. to occur before the thirtieth year, and only 2.4 per cent. after the fortieth year. Maxwell Telling,¹ another English investigator, found, out of 203 cases studied, no original attack to occur after the thirtieth year. From this we can well see that *age* is a predisposing factor of importance. *Heredity* is well recognized as furnishing a type susceptible to the disease, perhaps in the way it does in tuberculosis. An interesting fact has been brought out in statistics that tuberculosis and rheumatism are often associated, and observers have found that the so-called pretty type of child with the dark complexion, long eye-lashes and large, well-formed teeth, a type associated with tuberculosis, is decidedly prone to rheumatism. Again, like tuberculosis, one attack of the disease predisposes to another. *Sex* is mentioned as having an influence, the male being more

frequently attacked. *Autumn* appears to bear a seasonal influence. Rapid chilling of the body surface undoubtedly lowers the resistance of the individual to the disease.

Considering for a minute the various properly discarded theories as to the exciting cause, we find that, chronologically,² exposure to dampness, trophoneurosis, metabolic disturbances and auto-intoxication, have been advanced and staunchly defended. Can we wonder a good deal at Cullen, who lived in the eighteenth century, and was without any great opportunity for research, thinking that dampness was the real cause, especially when we stop to consider how often exposure to dampness precedes rheumatism? We can also understand how Dr. J. K. Mitchell, enthusiastic as he was in the study of nervous diseases, became biased and sought to prove that the arthritis in rheumatism was an indirect trophic effect of chilling of certain cutaneous nerves. The discovery of the over-production of lactic acid in the economy during the disease furnished the basis for the metabolic theory, and led such misguided observers as Latham, Richards and Rauch to take an effect of rheumatism and attempt to make it act in the role of a cause. Next came the era of the *auto-intoxication* faddists. What was more natural than to attempt to prove rheumatism to be the result of absorption of putrefactive products?

Just as we can understand what led to the errors of Cullen, Mitchell and the other theorists mentioned, we must confess our inability to see, in view of the evidence which has been adduced to support the most latterly introduced theory as to its infectious nature, how to-day we find supporters for other theories that are obviously fallacious. The evidence is convincing that rheumatism is a general disease, caused by a micrococcus, with local arthritic and cardiac manifestations. It would be interesting for us to retrospect to see how this evidence has accumulated, and to see the *why* for the term "convincing." The first step was in discovering that rheumatic fever was a clinical entity, and much more than a local affection. Sydenham assisted in differentiating it from gout; and observers from time to time reported the associated cardiac and tonsillar involvement. Dr. Macalagan,³ in the seventies, advanced the theory that rheumatism was due to miasmatic conditions similar to those that were thought at that time to cause

*Read before the Therapeutic Society, District of Columbia and the Prince George County, Md., Medical Society.

malaria. At any rate he associated rheumatism with a disease which we have since learned to be caused by a specific organism. Dr. Alfred Mantle,⁴ in 1886, wrote a memorable article on the "Etiology of Rheumatism," in which he reported the isolating of a micrococcus in pure culture from the blood of eighteen individuals suffering with the disease. Dr. Cheadle,² in his Harveian lectures, pointed out the analogy between rheumatism and other diseases known to be infectious in origin. He, among other things, laid stress on the frequency of the tonsillitis, endocarditis, erythematous eruption, capillary hemorrhages, and the apparent specific power of the salicylates. This further stimulated ambitious microscopists to attempt to isolate a specific organism.

In 1891, the bacillus achalme was announced as the exciting cause. The fact that other workers were unable to find the organism which was described to be the size of the anthrax bacillus, and that animal experimentation was disappointing, led to its being discarded. In 1899 Wassermann and Fritz Meyer⁵ described micrococci which they obtained from rheumatics, and with which they were able to reproduce the disease. Sahli,⁷ Singer and others denied that any one organism produced the disease. They announced, however, the recovery of *staphylococci* from rheumatics.

Poynton,² Paine and Beattie have been ardent workers in the search for the specific organism, and they are apparently convinced that their "diplococcus rheumaticus"—which they described as growing in liquid media in chains, and in grape-like bunches in solid media—is the specific organism. Walker, Cole and Meakins, working in this country, have isolated an organism of streptococcic morphology from rheumatics, with which they have reproduced the disease in animals. Meakins⁹ was unable to differentiate Poynton's organism from the streptococcus. The strain of streptococcus these observers mention is said to differ from the ordinary organism in that it produces a non-suppurating arthritis, and Walker especially calls attention to its acid production in growth.

From the work of this number of independent workers in isolating cocci from such a number of cases and, with them, being able to reproduce the disease in animals, can we not conclude that rheumatism is a general infectious disease, and that the "specific" organism is a protean coc-

cus? Poynton's² own statement in regard to his "diplococcus" growth in media gives opportunity for the thought that all these workers were possibly describing the same coccus, which, under certain conditions, assumes different arrangements. It remains for some worker to accurately describe unmistakable and characteristic signs for its differentiation from other cocci, and we can then put rheumatism in the category of the *specific* infectious diseases.

In consideration of the *morbid anatomy* of rheumatism, we are at first impressed with the fact that lesions are located in structures which during life are more or less in a state of activity. Thus, we find lesions in the joints, muscle tendons and heart. Frequency of joint involvement is most constant. The rheumatic nodes which are found in muscle tendons furnish rheumatism with a distinctive feature of pathology. The association of cardiac involvement is so constant, especially in early childhood, that it might well be considered to represent typical ravages of the infection.

Macroscopically, the joints present the well-known features of inflammation. The rheumatic nodes can sometimes be seen, or better felt just beneath the skin in tendons of the digits, patellar, or in the region of the occiput, as small oval masses. In endocarditis, the endocardium appears swollen and anemic, with the presence of warty protuberances, most frequently on the mitral and aortic valvular flaps. In myocarditis, the cardiac wall appears stretched and flabby. The pericardium, when involved, may show adhesions between its layers, and very frequently a sero-fibrinous exudate.

Microscopically, attempts have been made, notably by Poynton⁸, to show the similarity of the findings. Thus, he describes three zones as being constant: "An outer zone of swollen connective tissue; next, a zone of cellular exudate; and, finally, a zone of necrosis and cellular exudate." In the instances of pericardial and joint involvement, the fibrinous, cellular exudate furnishes constituents for the fluid found either in the pericardial or synovial sacs.

The warty growths on the valve flaps are constituted of fibrin. Statistics show that of cases of simple endocarditis, 20 per cent. are due to rheumatic infection. Malignant endocarditis is rather rare. When present, areas of ulceration are found. While in myocarditis there are often found areas of fatty degeneration.

The tonsillar involvement, which is so frequently a prodrome of rheumatism, presents nothing characteristic in the way of pathology; but it is interesting to note that a coccus has been frequently obtained from the tonsils of the rheumatic with which typical clinical evidences of rheumatism have been produced in animals.

Summary.—1. To avoid confusion in nomenclature, the various myalgias, neuralgias and painful joint conditions, which differ etiologically from the acute rheumatic arthritis, should not be loosely spoken of as rheumatism.

2. The term *rheumatism* should have a more specific meaning.

3. The predisposing causes of the disease have been well defined, and there is an unanimity of opinion of authorities as to predisposing factors.

4. Such suggested exciting causes as exposure to dampness, metabolic errors, and nervous derangements do not hold the weight of authority. The very number that have been suggested show the doubtfulness of any being the true cause.

5. The clinical course of the disease points to an infectious nature.

6. The great number of independent workers finding constantly a coccus strongly suggests that a coccus possibly allied to the streptococcic family is the specific cause.

7. The morbid anatomy of the disease is distinctive, and the predilection of the infection to attack cardiac structures is worthy of note.

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INDICATIONS FOR HERNIOTOMY IN INGUINAL HERNIAS.*

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I wish to make an apology for this paper as it is far from being complete, but I hope it will bring out some points for discussion.

Herniotomy is the only safe method of treating inguinal hernia in the adult, as we cure nearly all cases with a mortality nearly *nil*.

The operation on the aged is growing more popular, because it is being done with more safety and with greater promise^o of cure than formerly supposed.

It is the simplest and best method of treating hernia in children, especially above one year of age.

I contend that if statistics stand for anything in medicine and surgery, inguinal hernia should be treated in most all cases by operation as it is safer and more rational than any other method.

Some years back we made exceptions of small children and of the aged, but we find that we can safely operate on children or old people when they are sound in other respects. The exceptions are very delicate small children and extremely old people with large, long standing hernias, and where the heart and kidneys are badly diseased. In strangulated hernia we make no exceptions.

Some years ago when our technique and knowledge of operative procedure was not so good as to-day, the truss was used to considerable extent, but in many cases did more harm than good, first, by partially obliterating the canal or sac, which in after-life, by some extra effort, would allow the bowels or omentum to be forced down. A majority of these cases will become strangulated. Second, the muscles are greatly weakened and atrophied by pressure of the truss, and this makes the operation more difficult and less liable to be successful.

Treatment by injection appears to be not only unsatisfactory, but dangerous.

The truss is used more to-day by the laity than the physician; generally a drug clerk will fit a truss to the mass or swelling in the inguinal or femoral region without any knowledge of the anatomical arrangement of the parts.

*Read before the Medical Society of Northern Virginia and the District of Columbia, at Washington, D. C., November 15, 1911.

Possibly the mass may be a bubo, or fatty tumor, or hydrocele of the cord, or it may be a partially strangulated form of hernia.

The danger from operation is practically nil, so there is no excuse for the general practitioner not sending this class of cases for operation.

It is a well recognized fact that it is very difficult for members of the medical profession to throw aside old well-tried methods of treatment for something more radical, especially where this method is operative. The truth of the matter is the layman does not know that hernia is a curable disease, and he more frequently seeks a druggist than a physician in search for a truss as means of relief. The fault lies with the medical man in not educating the public that hernia is a dangerous condition and can be cured by operation.

A man with a hernia is not considered sound; he cannot enter into sports and pleasures or work to the same degree as his more fortunate brother. He is debarred from the army, navy, police and fire department services; he is likewise an undesirable risk for life insurance. Again, in childhood, the anxiety of the mother must be considered, for, whenever the rupture slips down, she worries until it is replaced; when she is away from the child she is afraid something will happen or the truss will work loose. The child is generally kept in the house when it should be out getting the fresh air, thus endangering the child's health.

About 75 per cent. of all hernias are of the inguinal variety. Coley, in reviewing about 15,000 inguinal hernias in the adult, reported that about one-third of them had hernia in infancy or childhood. Some writers claim that all inguinal hernias up to the period of middle life are congenital, and a majority agree that a typical acquired hernia is a rare condition.

The truss cures about 50 per cent. under 12 months of age, about 10 per cent. from one to five years, and after that practically none. In the acquired hernia the truss cures 5 per cent. at 15 years of age, and one per cent. at 30 years. Many of these cases are not permanent, as we have a congenital defect or partially closed sac that will cause recurrence later from some extra effort, as lifting heavy weights, or any effort that will cause great strain on the abdominal wall. Many times this will not occur until after middle life or old age, due partially to a lack of tone or thinning of

the abdominal muscles. After operation you rarely see this occur.

In operating on old people, we have a thin white tissue of the internal oblique and nearly obliteration of the conjoined tendon. The opening is either directed anatomically or has become so from long standing. This makes a poor floor. We may open the sheath of the rectus and use the muscle if necessary.

Relapses seen in these cases have come just above the pubic bone for several reasons. It is best to transplant the cord and close the lower angle as closely as possible; another cause of relapse in the aged is an old cystitis or enlarged prostate with accompanying symptoms as straining and frequent urination; lowered vitality is another condition that should be remedied before attempting herniotomy.

Operating upon children is less difficult than upon the adults. It is seldom necessary to disturb the cord. Always ligate the sac as high as possible and allow it to drop back. In the event there is no obliteration and the hernial sac and the tunica vaginalis are the same process, it will be necessary to divide this sac near the neck, then continue the dissection of the proximal part to the internal ring and ligate saving the distal portion as a tunica vaginalis. I think it best to keep this sac open, for by closing it tightly you may cause the formation of a hydrocele. (This happened in one of my cases in a small child. Thought at first I had found my first relapse, but, after thorough examination, found it to be a hydrocele. This was cured spontaneously.)

I think it useless in a paper of this scope to go into the technicalities of operative procedure to any extent. The Bassini operation with certain modifications to cover certain indications will be necessary for most all cases.

Dr. Robins, of Richmond, Va., gives us a very plausible method of treating strangulated hernias after opening down to the sac. He does not cut the constricting ring, but makes an incision through the rectus muscle above the hernia, and dilates the opening with his finger; in this manner the hernia is easily reduced.

In case of resection, you have very little trouble getting up the gangrenous bowel, and I find Mayo's modification of the Bassini very suitable for this purpose. This is done by making a more vertical incision, especially in large hernias in old people, cutting down

through the skin and fascia and external oblique, and dissecting this back over the sac after opening and ligating the sac high up. Then pull the cord up, close the conjoined tendon and internal oblique to Poupart's ligament. To make the floor stronger, pull the external oblique over and fasten to Poupart's ligament, then cover the cord with the remains of the external oblique attached above Poupart's ligament.

ALBUMINURIC RETINITIS.*

By LELAND O. MAULDIN, M. D., Greenville, S. C.

While speaking upon albuminuric retinitis, a subject well worn in many of its phases, I am mindful of the fact that among physiologists there is a great diversity of opinion as to the specific reasons why retinitis occurs in frequent coincidence with certain constitutional diseases and that the unmodified reasons why the retina becomes inflamed furnish yet an undeveloped field for interesting physiological research.

I am also mindful of the fact that in a paper of this kind it is needless to shroud our thought in the confusion of numerous theories (plausible and unplausible) as to the histological etiology of retinitis when there are so many practical facts that we know to be of incalculable value demanding our consideration.

It may be that what I have to say of albuminuric retinitis is a departure, in the main, from the text-book presentation of facts, yet the substance of views herewith presented is a summary of facts deduced from experience and observation.

There are many forms of retinitis and they occur most often as symptoms of internal disease and rarely as local lesions. Albuminuric retinitis is one of these, happening as a result of inflammation of the kidneys—in fact, occurring so frequently with kidney inflammation that it is regarded as a main symptom, and when present, upon it a prognosis is often determined.

Even before the ophthalmoscope was invented some eminent authorities on kidney disease called attention to the comparative frequency with which albuminuria was accompanied by failing vision. After the invention of this useful diagnostic instrument, investigators proved that albuminuric retinitis existed in about 25

per cent. of all albuminuric patients; that this particular form of retinitis was most frequently found with chronic granular kidney, though it occasionally accompanied large white kidney, sometimes lardaceous disease, and infrequently occurred with other forms of inflamed kidney. It has also been found that in albuminuric retinitis there are certain ophthalmoscopic appearances which are unmistakable in their diagnostic value.

This form of retinitis is a frequent coincidence in the albuminuria of pregnancy. When it occurs in pregnancy and scarlatinal nephritis, it is not of as grave significance as when it occurs with other forms of kidney disease.

The cardinal symptoms of a typical case of albuminuric retinitis are arteriosclerosis; failing vision, usually of both eyes; white deposits in the retina, especially those presenting a star-like appearance around the macula; hæmorrhages along the venous tree, usually flame shaped; swelling of the retina and optic disc; albuminuria and other constitutional symptoms of kidney disease. The conditions and ophthalmoscopic appearances mentioned are usually present with a few variations depending upon the stage of inflammation.

Other ophthalmoscopic appearances that may be present are a slight increase in size of veins and a slight decrease in size of arteries, a tendency to tortuosity of the arteries and a characteristic silver-wire appearance of their central light streak.

It is believed that arteriosclerosis is greatly responsible for the conditions in the eye presenting these ophthalmoscopic appearances. It surely accounts for the irregularity of calibre of retinal arteries and for their tortuosity, increased rigidity and lack of elasticity which are the result of sclerotic changes in the intima of their walls; it likewise accounts for the silver-wire light streak due to fibro-hyaline degeneration; for the increase in size of veins caused by the hardened arteries pressing on them at their crossing; for the edema and swelling of retina due to the obstruction of veins and back pressure on the retinal circulation, thereby producing tendency to exudation and thrombosis; for the retinal hæmorrhages the result of back pressure on the degenerated vessel walls, causing multiple, minute rupture of capillaries; and, finally, for the most classical ophthalmoscopic symptom of all, the stellate appearance at the

*Read before the Greenville County Medical Society, at Greenville, S. C.

macula, due to swelling of retina from edema at the most vascular point—namely, the fovea. The retina being attached at the optic nerve, fovea centralis retinae, and at the ora serrata, when it swells it naturally takes the form of folds or puckers, radiating from the attachment. In these folds it is possible for the albuminous exudates to be deposited to coagula and degenerate; hence, the star at the macula lutea.

It is important, then, for us to have our eyes open to a possible early diagnosis of arteriosclerosis by the ophthalmoscope, so that treatment can be instituted in time to do some good, which is before advanced changes have taken place in the heart and kidneys.

Sometimes in diseases of the kidneys we have noticed impairment of vision without retinal changes. These cases are not often met with, but we account for them by uræmic poisoning producing post-optic neuritis.

In cases of albuminuric retinitis of pregnancy, we have an impairment of vision with typical ophthalmoscopic changes. Some of these cases of pregnancy go on through gestation with successful labor following, and have a return of vision with gradual clearing up of the eye-fundus after labor.

It is a solemn fact that only a very small percentage of albuminuric retinitis cases get permanently well except those in which pregnancy or occasionally scarlet fever are causative factors.

That the retinitis of pregnancy terminates favorably usually with the termination of pregnancy indicates that a poison in the system akin to uremic poisoning is also instrumental in producing albuminuric retinitis. We might then conclude that there must be a combination of causes to produce albuminuric retinitis, and that among them arteriosclerosis and some form of uræmic poisoning are present. It seems that if arteriosclerosis is marked, the prognosis is bad; if it is slight, the prognosis in pregnancy cases is not always grave.

In this connection, I wish to mention as an interesting fact that patients afflicted with albuminuric retinitis who get well during one gestation are apt to have a recurrence of the same trouble during subsequent periods of pregnancy.

In albuminuric retinitis, excepting cases of pregnancy, the prognosis is always grave. History of medicine teaches us that, when albumin-

uric retinitis follows inflammation of the kidneys not due to pregnancy, about sixty per cent. of all cases die within one year from the time the retinitis developed; and about eighty-five per cent. die within two years, and fourteen per cent. live longer than two years. Very, very few cases live longer than five years. Therefore, the appearance of this form of retinitis as a complication of kidney disease is a symptom of great prognostic value. The fact that it appears is of greater significance in prognosis as to the life of the patient than is the fact of a slight or extensive involvement of the retina, *i. e.*, the extent of a retinal lesion is not an index to the extent of the kidney lesion, but the appearance of the retinal lesion is of valuable significance in predicting the termination of the kidney disease.

Treatment.—In view of the fateful prognosis of the affection, it is evident that treatment has proven to be not very effective.

Local treatment is of little value.

A symptomatic, constitutional, alterative and diaphoretic treatment directed towards the underlying internal trouble is along the line of best medical thought and may prolong the patient's life.

Now, to recapitulate, there are several thoughts in connection with this paper that I wish to impress before closing:

1. Albuminuric retinitis is one of many forms of retinitis and a differential diagnosis has to be made between this and other forms. This form occurs in connection with kidney disease.

2. It is associated mainly with arteriosclerosis, and is induced by a toxin in the blood which accompanies disease of the kidneys.

3. The ophthalmoscope is useful to reveal a beginning arteriosclerosis, and may enable us to advise a constitutional treatment in time to be effective in arresting the progress of serious subsequent lesions.

4. Albuminuric retinitis occurs in about 25 per cent. of albuminuric patients.

5. When it occurs it is a valuable prognostic symptom.

6. If associated with pregnancy or scarlet fever, it is a serious symptom, but not so grave as when it occurs independent of these conditions.

7. When present, it has certain definite, characteristic appearances, recognizable with

the ophthalmoscope, that are unmistakable in their diagnostic significance.

8. Our knowledge of this disease is of chief value, nor for treatment, but for a more accurate diagnosis and prognosis in kidney inflammations.

ANATOMY OF GALL BLADDER AND DUCTS.*

By JOHN W. WINSTON, M. D., Norfolk, Va.

The gall-bladder is pyriform in shape, lying in a shallow groove on the under surface of the liver where it is fixed by peritoneum, cellular tissue and numerous small blood-vessels. The fundus or anterior end is usually covered wholly by peritoneum, projecting slightly at the anterior edge of the liver, opposite tip of tenth costal cartilage and immediately behind the



Figure 1. Anterior view. A. Shows gall-bladder projecting.

anterior abdominal wall. When distended it may reach to the right of the umbilicus or even lower. Little can be told by percussion but sometimes something can be made out by palpation and inspection.

The normal gall-bladder holds from 50 to 60 grammes, or about two ounces, but is capable of great distention. Result of inflammation or non-use may cause almost solid viscus with small cavity.

The long axis of the gall-bladder is back-

wards and slightly upwards, but in cases of downward displacement of the liver may be almost upwards and in this instance its axis will form a sharp angle with that of the cystic and common bile ducts.

When not displaced, the under surface of the gall-bladder rests on the pylorus or commencement of the duodenum and the hepatic flexure of the colon, and in one out of every six cases there is a fold of peritoneum connecting it with the colon (cytso-colic ligament).

The neck or narrow end of the gall-bladder is somewhat sinuous, curving from below upwards and from right to left, then directly backwards to the commencement of the cystic duct. This curved portion, like the greater part of gall-bladder, is fixed to the liver by folds of peritoneum. As shown in tracing at this point, there are several valvular folds of the mucous membrane, corresponding to the depressions on the outer surface. Beyond these folds the actual commencement of the cystic duct is narrowed. Hence, calculi are apt to become tightly impacted at this level. For the same reason, the tortuosity of the cystic duct and the presence of its valvular folds, it is usually impossible to pass a probe or bougie along the duct from the gall-bladder. If, however, the duct has become dilated and straightened from backward pressure or by the passage of calculi, this may be possible.

In most operative cases, with a little care in directing the probe, we can generally get by these obstructions into the common duct, and then the journey into the gut is easy, unless there is a stone or pancreatic obstruction in the way.

The vesical neck is in close contact with the right branch of the portal vein and below with the duodenum.

The cystic duct, which varies in length from one to three inches, passes downward in the gastro-hepatic omentum, immediately in front of the portal trunk, to the right of the hepatic artery, being joined very obliquely by the main hepatic duct. The hepatic duct is somewhat larger, thicker, and longer than the cystic; it has no valvular folds, hence calculi, though frequently met with loose in the hepatic duct, are rarely impacted there.

The common bile duct, about three inches in length, passes obliquely downwards, slightly backwards and to the left to open in common

*Read before the Surgical Section of the Norfolk County Medical Society, at Norfolk, Va., February, 1912.

†The descriptive anatomy given in this paper is taken largely from Jonathan Hutchinson and John B. Deaver. The pictures are simply tracings from drawings by others.

with the pancreatic duct into the second portion of the duodenum about its middle. It enters the pancreatico-gastric fold behind the first portion of the duodenum and is crossed by the pancreatico-duodenal artery as it approaches and pierces the posterior and inner (concave) side of the second portion of the duodenum. It is good to bear in mind that a probe passed into the bowel, on entering same, points towards the gall-bladder and not to the left.

The common duct lies, at first for about one inch, in the gastro-hepatic or lesser omentum, just at its free or right border, and is crossed usually in front by the pyloric and right gastro-epiploic arteries. The double layer fold of peritoneum passing from the under

come compressed between itself and the duodenum, and thus interfere more or less with the flow of bile.

Below the narrow valvular opening of the common-duct into the duodenum, there is a slight dilatation (the Ampulla of Vater). The opening is marked by a papilla, which may be seen by opening the vertical portion of the duodenum.

If a large calculus or a number of small ones have lodged in the ampulla, the papilla will become more conspicuous.

The main pancreatic duct does not always empty into the ampulla as shown in the drawing. It not infrequently opens separately from the common bile-duct (Quain). In fact, Bün-

ger found that almost without exception there are two separate orifices on the papilla, and, if true, is another proof that drainage of the gall-bladder relieves a lymphangitis of the pancreatic head *per se*, and not by draining the pancreatic duct.

The point as to the single or double opening of these ducts is of some practical importance in the exploitation of either duct from the duodenum.

From simply seeing the bile-duct in the anatomical specimens, one can hardly realize the size and thickness it is capable of attaining. Mr. Eve, in the London Hospital, operated on a case where the dilated duct would hold one's hand, and in many cases it has been found to have the diameter of the small intestine of an adult.

In operating, it is well to bear in mind the fact, that both where the cystic duct passes into the gall-bladder and at the lower end of the common bile-duct, there are conditions specially favoring the impaction of gall stones.

While the portal vein is usually behind the common bile-duct and between it and the hepatic artery, in some cases where it is large, it may extend to the right of the common-duct and even project upward far enough to cover it. In such cases it is often confusing to tell whether it is the duct dilated or the vein. When in doubt, it is best to inject a hypodermic syringe to determine by aspiration whether duct or vein.

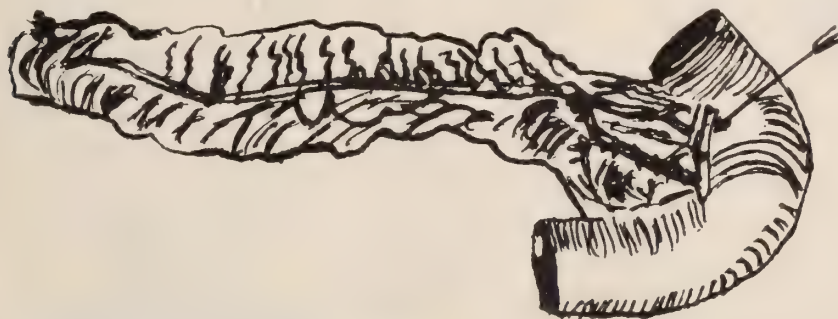


Figure 2. Posterior view. Shows second portion of gall-duct as it passes behind second portion of duodenum, and between it and head of pancreas.

surface of the liver to the upper surface of the stomach, enfolds the common bile duct and extends to the left to the stomach and around the duodenum. To the right this part of the lesser omentum is free, leaving an opening behind the common bile-duct and duodenum, through which the finger can be passed behind the stomach from the greater to the lesser peritoneal cavity. This opening is the well known foramen of Winslow. It is in this comparatively free portion, increased perhaps by the drawing downwards of the first portion of the duodenum, that the common bile duct is mainly accessible to the surgeon. Through an incision made in its long axis, after division of the peritoneum over it, suitable forceps may be passed down into the lower and protected portion of the duct. The latter runs behind the duodenum and in a groove of the pancreas, and is very closely applied to both organs. Almost always the duct is deeply imbedded in the substance of the pancreas. It is easily seen how swelling of the head of the pancreas can cause the common bile-duct to be-

Puncture of the vein with a needle is of no moment but without precaution incision may bring disaster.

Stones in that part of the duct enveloped by the pancreatic tissue are apt to be overlooked, unless to our sense of touch is added thorough probing. The common-duct, as stated, is capable of great distention and rupture only occurs



Figure 3. B. Gall-bladder. A. Cystic duct cut into so as to show how folds close lumen. C. Hepatic duct. D. Common bile-duct. E. Pancreatic duct. F. Ampulla of Vater.

when its wall is weakened by ulceration, necrosis or traumatism.

The lymphatic supply to the biliary tract leads to the duodenum, appendix and head of the pancreas, which explains how a disturbance here may have had its beginning with a diseased appendix or even an ulcer in the duodenum, and in all operations these parts should be looked at in order to remove the initial cause, and in the end get the all-important relief, without which our efforts are of little or no avail.

In interstitial pancreatitis, the whole pancreas is thickened and enlarged. In pancreatic lymphangitis only the head of the pancreas is enlarged, which is due to the fact that only the head of the pancreas is supplied by lymphatics from the biliary tract, while those that supply the body come from another source. Infections of the gall-bladder tract, as we know, are often accompanied by a severe lymphangitis, involving only the pancreatic head, and are explained in this way.

It is thus explained why prolonged drainage

of the gall-bladder relieves this often very distressing condition. Again, it is explained why failure to get free drainage, even after the external wound closes, is responsible for the failures to get a perfect cure and a return to the same condition later on. It explains also why cholecystenterostomy and choledochenterostomy are sometimes indicated, and why a gall-bladder that cannot return to the normal, should be removed.

Nothing is more important than a thorough knowledge of this anatomy, in order to make early diagnoses and to do just the thing that is needed. To know just what should be done is of much greater importance than the most beautiful operation. A most careful review of this anatomy gives us no reason to suppose that drainage of the gall-bladder in any way helps to drain a chronic interstitial pancreas. By relieving the enlargement of the pancreatic head, it does help greatly in a pancreatic lymphangitis. Removal of a stone in the ampulla may also relieve this condition.



Figure 4. Shows Ampulla of Vater. A. Common bile-duct. B. Pancreatic duct. C. Stone in Ampulla of Vater. D. Longitudinal section of duodenum.

One more word and I am through. Inasmuch as most gall-bladder operations occur in persons past middle age and many in the aged, it is well to know one's patients thoroughly, and, in many instances, prepare them for the ordeal. Especially should we look for myocarditis and where found prepare them by rest in bed and a course of digitalis; for attention to this point means a saving of life.

The Eighth Medical Councillor District of North Carolina held its second annual meeting with the Guilford County Medical Society, in Greensboro, on the 7th. The program included a number of interesting papers and was followed by supper at the McAdoo Hotel.

Proceedings of Societies, Etc.

NORFOLK COUNTY MEDICAL SOCIETY— SURGICAL SECTION.

Reported by FRANK H. HANCOCK, M. D.

For paper, see page 590.

At the February, 1912, meeting of the Surgical Section of this Society, Dr. John W. Winston read a preliminary paper upon the *Anatomy of the Gall-Bladder and Ducts*,* following which there was a general discussion of the

Surgery of the Gall-Bladder and Biliary Ducts.

Dr. Stuart McGuire, speaker of the evening, and guest of the Society, lectured upon the embryology, anatomy and surgery of these organs. The following is a brief of what he said:

Dr. McGuire sketched a diagram of this area upon a blackboard, and said that the stomach, liver, pancreas, and upper part of the duodenum were derived from the primitive fore-gut, and that they were especially concerned in the preparation of food for absorption.

The liver is relatively larger before birth than afterwards; on account of change in the circulation at birth, its blood supply was reduced, so that its growth is less rapid.

Of the five lobes, the right and left only are of surgical importance. A tongue-like process is sometimes seen projecting from the right lobe near the gall-bladder, called "Riedel's" lobe, sometimes the "corset lobe" as it is possibly due to tight lacing, though it has been seen often in those who do not wear corsets.

Arterial blood reaches the liver through the hepatic artery; this latter is a branch of the celiac axis, from which the other derivatives of the primitive fore-gut—stomach, pancreas, upper duodenum—receive their blood supply, a fact which is of interest in connection with the chemical influence of *secretin* and *hormones* on digestion; and of further interest in showing the intimate association of these organs that have become so highly specialized and differentiated in the vertebrates—offshoots of the simple tube that still exists in the amphioxus and the human embryo.

The mechanism of the portal system is a

supplemental fact of this close physiologic relationship, because the products of food digestion are sent *through the liver*, and then into the general circulation in the higher vertebrates, bathing the liver cells with the food as digested by the lining membrane of the intestine, from which the liver cells came. In the more simply organized animals these same food-stuffs are assimilated by the lining epithelium of the single tube, and passed *directly* into the circulation, there being no intermediary liver.

There are, therefore, no arbitrary anatomic boundaries between any of these organs, and pathologically they must be considered together to some extent at least.

A consideration of their joint affections is one of the most interesting contributions the Mayos have made to diseases of the abdominal viscera.

A large percentage of the known diseases of the pancreas originate through the important terminal association of its excretory duct, the duct of Wirsung, with the common duct, both opening into the ampulla of Vater and thence into the duodenum.

In 62 per cent. of cases the terminal third of the common duct is embedded in pancreatic tissue, so that any change in the structure of the pancreas may give rise to jaundice by closing the common duct, or infection in any part of the bile tract exposes the duct of Wirsung, and through it the pancreas, to infection.

Mr. Snyder Phillips has shown quite conclusively that epidemic catarrhal jaundice is due to pancreatic disturbance, very much like inflammations of the parotid gland are due to mumps.

Mayo Robson reported the first operative case of chronic pancreatitis produced by gall-stones in 1900, and our modern conception of this disease is due to him. Since then he has stated that 60 per cent. of his operations for the removal of common duct stones showed an associated chronic inflammation of the pancreas. *Therefore, you cannot consider gall-bladder infections, and cholelithiasis aside from these lesions.*

The Mayos only found chronic pancreatitis accompanying stone in the common-duct in 18.2 per cent. of cases. However, they only classified the indubitable cases. Robson's diagnosis with the aid of the Cammidge cry-

stals being finer drawn. Since then chronic pancreatitis is the result of stones in the common duct, and removal of those stones with temporary free drainage by means of a cholecystostomy will relieve the disturbance, and the pancreas will resume its normal size and function.

It is often difficult to differentiate gall-stone disease from duodenal ulcer, they having many things in common. One of the cardinal differences, however, is *loss of nutrition*. While not always early, it is usually marked in ulcer, where there is a constant sacrifice of food through vomiting, whereas in gall-bladder trouble the attacks are short and widely separated, and nutrition is rarely affected until the inflammation has transcended the limits of the gall-bladder with resulting adhesions, the loss of nutrition then coming into evidence. Pain in cholecystitis is sudden and severe, radiates widely, comes without regard to time, has no relation to food, and is rarely relieved by vomiting. In duodenal ulcer pain comes in periods, attacks lasting for days or weeks; it is often sudden, may be severe, but has not the lightning intensity of the gall-stone colic, it is rather gnawing and burning, and is clearly related to food, even being modified by the kind and quantity taken.

Dr. McGuire dwelt upon the fact that in gall-stones the general health does not suffer until complications have ensued; there occurs then a syndrome that so closely resembles duodenal or pyloric ulcer that only the previous history of gall-stone attacks will differentiate the conditions.

Gall-stones in nearly all cases form in the gall-bladder, and those seen in the common duct have with few exceptions migrated there from their normal habitat.

Gall-stones occur three times as often in women as in men for some unknown reason.

The Mayos report 1,800 operations for stone in which 76 per cent. occurred in women, and 24 per cent. in men.

Since bacterial infection plays such a role in the production of stones, it is probable that the constipation from which women habitually suffer throws a large number of bacteria of the colon group upon the liver with resulting formation of stones. The liver of the pregnant woman, too, caring for both mother and child would be more liable to this infection, and

Naunyn states that 90 per cent. of women with gall-stones have borne children.

The three important factors in the production of gall-stones are: (1) micro-organisms, (2) obstruction to free drainage, (3) lithogenous catarrh, or gall-stone diathesis, about which we know very little.

Cholesterin, the most important constituent of the calculus, is directly produced by the action of bacteria upon the mucous membrane. Of the micro-organisms concerned, the colon group are the most active, especially the typhoid bacillus. Many cases of gall-stones can be directly traced to typhoid fever, and in one instance the typhoid germ was found in the gall-bladder seven years after an attack of typhoid fever. The use of cystogen in typhoid fever would appear to be a wise procedure since it has some antiseptic influence upon the gall-bladder and bile passages, clearing them of these hibernating typhoid bacilli.

Gall-bladder infection is probably produced by bacteria carried through the liver of the portal circulation, the action of the liver being to attenuate the virulence of the micro-organisms.

Speaking generally, operations for simple gall-stone disease are exceedingly safe. The operation of choice is a cholecystostomy, the mortality of which is not greater than one-third of one per cent., with permanent cure in 95 per cent. of the cases.

Cholecystectomy is preferred by some surgeons, though it has a slightly higher mortality. It is open to the further objection that it is not good surgery to remove a functioning organ, depriving the body in this case of the gall-bladder's secretion of mucus which, mixing with the bile, renders it less irritating to the pancreatic duct, and of the bladder's other office of regulating the flow of bile into the common duct (Mayo).

Stones in the cystic duct are not, as a rule, completely obstructive; the symptoms are not usually acute; there is local tenderness, with a gradual forcing of the stone into the common duct by the muscular gall-bladder. When stones become impacted in the cystic duct and there is complete obstruction, the gall-bladder becomes cystic or empyemic.

The operation of choice for the relief of stones in the cystic duct is obviously a cholecys-

tectomy, because of future stricture of the cystic duct where the stones have lodged.

Stones in the common duct give rise to *jaundice*. The subject is prone to attacks of *cholangitis*, with chills, high fever, and sweating. The pancreas may become infected through the duct of *Wirsung*, or if it remains free, the fact is probably due, as shown by *Opie*, to the existing patency of the accessory duct of *Santorini*.

Stones in the common duct are removed by a *choledochotomy*, with temporary drainage to the surface. Hepatic duct stones are usually accompanied by common duct stones, are secondary to them, and receive quite the same treatment.

Dr. Lomax Gwathmey, opening the discussion upon this subject, addressed himself to intercurrent pancreatitis occurring in connection with gall-stones. He said that while the pancreas was an organ of internal and external secretion, it seemed to be the opinion of physiologists that the *internal* secretion was on the wane, probably an evolutionary change expressing itself in an opposite way from that of the thyroid gland which, too, had entirely lost its *external* secretion through evolutionary changes. It seemed to be quite definitely believed that *organs undergoing changes of form or function are very susceptible to disease*, as the sigmoid, thyroid, appendix, or prostate, or gall-bladder in this, that their advancing functions have to be carried on in old forms.

Thus in about half the cases of the pancreas, the upper duct of *Santorini*—always patent in the *fœtus*, and now become accessory in the adult—is closed, and the only exit is through a conjoined opening with the common duct, as stated by the two previous speakers, exposing the liver, on the one hand, to infections from the pancreas, and the pancreas to infections from the liver on the other—a greater misfortune.

Some philosophers profess to believe that these morphologic relationships will be improved sometime in the future. Let us hope so! At present, however, this is the fatal situation of the pancreas. Since chronic pancreatitis is usually associated with, or brought on by stones in the gall-bladder or biliary tract, it is essential to relieve the common duct of as much of its bile-carrying function as possible, which is accomplished through drainage to the sur-

face, or to some point in the neighboring bowel below. Now the pancreas itself the subject of an infection from the bile tracts, swells and presses upon the common duct as it passes through its own tissue, closing it, preventing that biliary drainage which is necessary for the relief of the infection upon which the pancreatitis depends. When gall-stones are present, their removal with temporary free drainage will practically always cure chronic pancreatitis. When no stones are present in chronic pancreatitis, more prolonged, if not permanent, diversion of the bile from its pancreatic association is necessary and a *cholecystenterostomy* is the operation indicated.

This was another reason *Dr. Gwathmey* gave why *cholecystectomy* should not be performed originally in simple gall-stone disease, because of the need of the gall-bladder to establish permanent drainage whenever it might happen that gall-stones, dropping down into the bile-tracts, should start a pancreatitis.

Dr. E. E. Feild believed that while it was useful and entirely proper to consider the various methods of relief from gall-bladder diseases secured to us by surgery, it would be wise indeed to dwell for a few minutes upon the preventive measures, to see if we might not arrive at some practical understanding of why these toxemias arise so often among more highly civilized people.

Dr. McGuire replied that these toxemias arise in consequence of the luxuries with which highly-civilized people surround themselves. If we were to return to the primitive conditions that obtained in the earlier years of man's sojourn, we might avoid them, or if we as individuals were to deny ourselves the alcoholic beverages and the highly seasoned food, or more important still, the *excess of food* with which we charge our digestions—every atom of which must first pass through and be handled by the liver cells, burdening them so that, along towards middle life and after, they begin to tire and are no longer capable of the fine manipulation they have heretofore exhibited in the presence of overwhelming quantities of food; the small hepatic arteries are not then so elastic, connective tissue appearing here and there, with pressure effects upon the hepatic cells, and a consequent loss of virility; but the food comes on, and some of it gets by, and, with bacteria too slightly attenuated, gives rise to the toxemias

we are discussing this evening, cholelithiasis, cholecystitis, and cholangitis and to others, which we vaguely call *rheumatism* and *gout*,—which we reverently ascribe to the weather—and arteriosclerosis, and its train of symptoms.

Dr. R. L. Payne, Jr., asked if it was not a fact that bile was considered sterile by some writers? He had noticed recently a statement to the effect that the duodenal area immediately around the opening of the common duct was quite devoid of germs, which inclined him to the belief that the bile itself was practically sterile *as long as there was free drainage*.

Eusterman in a paper written in 1910 referred to the gastric motor neurosis, pylorospasm, as an *entity*. Dr. Payne did not believe it should be so designated as it was secondary to disease changes in other tissues always, and was a pure reflex.

Dr. McGuire agreed as to the pylorospasm being a symptom of disease change, or irritation somewhere else. He said that it occurred in response to a danger signal to close the gates because there was trouble somewhere along the digestive tract, and no food must enter until the disturbance was over.

No! bile was not sterile, neither was it anti-septic, as has been so devoutly believed. That it possesses a measureable degree of toxicity is quite susceptible of determination; if it did not, the pancreas would not be in such danger from the passing through it of the common duct, and the commingling of the two secretions, giving rise to pancreatitis in the cases where the bile does come through, infecting the duct of Wirsung.

Bacteriology has shown that bacteria play an enormous role in the production of the pathologic lesions seen in the gall-bladder, liver and bile passages; and it is quite certain that these bacteria are carried to the liver in the portal circulation, where under normal conditions they undergo some process of attenuation, but later, in connection with the mucous membrane of the gall-bladder, give rise to stones, and, in turn to the acute infections of those areas which we are discussing. Clumps of bacteria are often found in the nucleus of gall-stones.

Mr. Randolph Bolling, Chemist for the United States Government, assigned to the Norfolk Navy Yard, asked what were the chemical constituents of gall-stones and in what combination were their salts: were they carbonates or

phosphates, if either, and what was the percentage of mineral matter on ignition?

Dr. McGuire replied that 70 to 80 per cent. of the substance of gall-stones is cholesterolin; that the rest is composed of bile pigment and lime salts—usually the carbonates—that the percentage of mineral matter is small; that these proportions vary a good deal in the size and classes of stones.

Dr. Southgate Leigh expressed his pleasure at seeing Dr. McGuire in Norfolk, and at hearing him lecture. He would likewise take this occasion to commend Dr. McGuire's course in coming over to the Ether Anesthetists. He could understand that the separation from his old friend, Chloroform, had been effected with much of qualm and trepidation, after the valuable service it had rendered him, but he was sure the wisdom of it was now apparent even to so stout an advocate of chloroform as Dr. McGuire had been.

The speaker related that he had just returned from the Mayos, where the impression seemed to be that a somewhat longer time for drainage following gall-bladder surgery should be employed than perhaps had formerly been used, and a longer incision. It was there reported that Dr. Charles Mayo's last request in New York before going under ether for the removal of gall-stones was that they drain *outside* of the gall-bladder as well as *inside*.

Lastly, he commended to Dr. McGuire the nitrous oxide-oxygen gas anesthetic as an improvement upon the one he was now using.

Dr. McGuire said that he was very much perplexed by this last advice given him just then by Dr. Leigh, because for the past fifteen years Dr. Leigh had been prominent among those of his friends who had urged him to abandon the use of chloroform for ether; that Dr. Leigh had especially assured him of ether's incomparable advantages, and now that he had left his ancient ally, it was painful to him to find that those who had advised him to do so had themselves taken other positions, and with all the ardor of new converts were beckoning him to follow. He was bewildered by these rapid changes, and quite despaired of ever being able to overtake Dr. Leigh.

Dr. Charles R. Grandy had been much impressed with the numbers of gall-stone cases seen in the German Clinics. At that time, several years ago, he supposed it was true of all

clinics, where people presented themselves indiscriminately, but was surprised to find after considerable experience in Southern clinics that the gall-bladder cases in the negroes were very rare; in fact, were almost never seen.

Dr. Edward E. Hargrave in an extensive experience with the negroes of this city and section in the clinics and in private practice, had rarely seen a case of gall-stones.

In replying to both, *Dr. McGuire* said that their observations were entirely correct, and had been noticed by many Southern surgeons. These diseases were not prevalent among the negroes, neither was appendicitis, gout, or early senility, because the negro had not reached the crest of the wave of high living. His life was still simple as compared with the Teuton and the Anglo-Saxon; he had sound teeth, a good digestion, a less sensitive conscience, a capacity for slumber, and a nature able to oppose as yet these evidences of civilization.

No! stones should not be left if accidentally discovered while doing a gynecological operation, because none of them were innocent at any time.

Schroeder has shown that 14 per cent. of gall-stone patients eventually suffer from cancer of the biliary apparatus. Courvoisier found that 74 out of 84 cases of malignant disease of the gall-bladder had gall-stones, and Siegert states that 95 per cent. of primary cancer of the gall-bladder are preceded by gall-stones.

The stones by constantly rubbing against the mucous membrane keep up a chronic irritation, which finally results in an epitheliomatous hyperplasia from the same mucous membrane that in connection with bacteria produced gall-stones in the first instance.

This section then adjourned to attend a Buffet Supper given by the Society in honor of *Dr. McGuire*.

Analyses, Selections, Etc.

Use Common Sense in Infant-Feeding.

During the last few years there has been a marked tendency by the medical profession to discard complicated formularies in infant-feeding. This is indeed a welcome relief, as most

of us have not forgotten our unnecessary expenditure of energy in acquiring this or that system of feeding. Americans have always been noted as faddists, and fall head over heels in adopting chimerical propositions set forth by leading lights without awaiting a thorough testing of new hypotheses. This characteristic has led them into many errors, in many instances to their sorrow. We have had somewhat the same experience in artificial feeding in babyhood. The modification of milk was carried to such limits that if it were not for the tragedy attached to it, it would be laughable. In some instances the proteids, fats, etc., were so diluted that children were undoubtedly starved to death. All of us have no doubt seen children who were on the verge of death from inanition on modified diet as heretofore and even at present practiced immediately pick up and take on new life when a common-sense doctor ordered a discontinued fanciful modification and placed him on whole milk diluted one, two, three, etc., times, according to the indications of the case. As a matter of fact, we have been informed that teachers of pediatrics have almost entirely discontinued teaching their students systems for modification of this article of diet, and now impress upon the student the necessity of resorting to common sense in infant-feeding. They have come to realize that one child of a given age will thrive on whole milk, while another will need it decidedly diluted. There are no fixed rules, therefore, and each case must be studied individually. It has been found that the best procedure is to start the baby on whole milk diluted about four times and note how he thrives. If he manages such a dilution, but does not gain properly, then a larger feeding or a less dilute diet is ordered. We do not desire to convey the impression that scientific feeding has been without value, but that it has been carried in the past to ridiculous extremes. Undoubtedly, instances will still arise in which it can be employed satisfactorily, but the ordinary run of physicians will derive more satisfaction from the simple line of procedure outlined above.—(*Editorial, Maryland Med. Journal*, February, 1912.)

This department has been abbreviated in the present issue, owing to the absence from the city of *Dr. Peyser*, the editor-in-charge, because of sickness in his family.

Correspondence.

BICHLORIDE OF MERCURY AS A SPECIFIC IN GERM DISEASES.

BIRMINGHAM, ALA., FEBRUARY 7, 1912.

To the Editor,—In renewing my subscription for 1912, it gives me pleasure to state that I have found much practical good in your pages, even to an old practitioner, who in April will—in army and civil practice—have been actively engaged for fifty-six years. Outside of my hospital work, I have in my office an accurate record of more than 400 cases of typhoid in a little more than twenty-eight years. While percentage of recoveries had been satisfactory, I was so impressed with the article of Dr. Jones, of Roanoke, Va., on Typhoid Fever and the Use of Bichloride of Mercury that in the last two years I have treated twenty-nine cases with it, with recovery in all and a general abbreviation of duration when early begun. In cases of incipient tuberculosis, it is my custom to use it in conjunction with ichthyol in full doses. Experience has proven the value of the latter, which I give in 6 to 8 minim doses in suspension in petroleum every three hours while awake.

E. H. SHOLL, M. D.

Book Notices.

Vaginal Celiotomy. By S. WYLLIS BANDLER, M. D., Adjunct Professor of Diseases of Women, New York Post-Graduate Medical School and Hospital. 8 vo.; 450 pages, with 148 illustrations. Philadelphia and London: W. B. Saunders Company. 1911. Cloth, \$5.00 net; Half Morocco, \$6.50 net.

Vaginal celiotomy may be a very good thing, or it may not, but the way in which Dr. Bandler has presented his subject makes it all look very simple and easy to do. Probably a large majority of surgeons prefer to get into the belly by the abdominal route. It is undoubtedly true, however, that much work for which the abdomen is opened can be done comparatively easily and satisfactorily per vaginam; where such considerations leave little choice as to the effectiveness of an operation, the element of safety will more commonly favor the vaginal path. It is a question for the surgeon to weigh in a given operation—is going through the abdominal wall simply following a rut in practice, or is it the best way?

The many excellent drawings, showing operations step by step, give the book an added value.

Editorial.

The Trained Nurse.

The aim of professional education is to equip the student for his entrance into the school of experience. In some vocations theoretical, in others practical training is of major importance. The pupil nurse should receive adequate instruction from books and a thorough drilling in the sick room. While, on occasions, she must assume a physician's responsibility, take the initiative and act in emergencies, her essential function, apart from peculiar duties, is to carry out the doctor's orders and not incur the risk of doing harm by the application of a limited amount of technical learning.

Is there not a tendency in present day methods to over-educate nurses in theory? The text-books over which they pore are almost sufficient for medical students. Worked down and worked up by daily and nightly ministrations at the bedside; suffering at times for want of sleep and exercise; instructed by the superintendent; and snatching from the books what they can during off hours, it is not surprising to see them affected once in a while with double ptosis when the doctor lectures and adds to their intellectual burdens. Be the speaker a combination of Hippocrates and Demosthenes, his words may never make the desired impression upon the listener's sensorium. "The spirit indeed is willing, but the flesh is weak," for too often the student has been overtaxed in body and mind.

It is not a question whether women may not make good doctors, but whether the imperfect and tantalizing acquaintance of nurses with general medicine may not disqualify them, on the one hand, for their specific duties and tempt them, on the other hand, to use a dangerous quantum of knowledge as actual practitioners of medicine. In medical science and art there are certain well-established truths and certain fundamental and fixed principles of procedure with which the nurse should be familiar. The teacher should see to it that these requisites are taught and emphasized; but the introduction into the learner's mind of figures, formulas, and facts which, if remembered, can avail little is a waste of time and a handicap.

In many hospitals the training of nurses is

one-sided. Quite proficient in surgical cases, they are comparatively inexperienced in the management of those diseases which they are most apt to encounter after graduating. It were better to spend the time allotted to non-essentials in teaching the pupil how to care for lying in women and the infections of childhood.

The trained nurse is an indispensable fixture in medical life; but we believe that her usefulness and happiness would be enhanced by such reforms in her education as the foregoing comments will suggest.

WM. S. GORDON.

Vital Statistics in Virginia.

A most important recommendation made by State Health Commissioner, Ennion G. Williams, in his annual report is the need to enact a law requiring registration of births and deaths. A bill to this effect has been passed by the Senate of Virginia, and, as we go to press, is on the calendar of the House, where it should by all means be enacted into the statutes.

The need for such a law was recently urged in the editorial columns of this journal. Virginia is one of the few States in this part of the country which makes no provision for vital statistics. In addition to the assistance it would be to medical records to have a more systematized registration, it would be of inestimable worth in a legal way, as there are often cases in which there are no records to prove by law the date and place of birth or death of those interested in estates, etc. Apropos of the above, we have recently read of a man residing in a Northern State, who was denied his commission as a probate judge, to which office he had been elected, as he could not furnish the required certificate of birth from the courts, though it was a matter of family record.

The passage of a bill requiring the registration of births and deaths would be of incalculable assistance to us individually and as a people, and would aid us in assuming our proper place in the vital records of the country—a matter we have already too long neglected. Undoubtedly the high mortality rate given our State in the last census reports is due to the lack of registration of births.

Consolidation of Virginia's Medical Schools Not Enacted.

The merging of the Medical Department of

the University of Virginia, Medical College of Virginia and University College of Medicine, as advocated to the General Assembly by the Virginia Education Commission, has received a set-back for two years at least. Although representatives from the Richmond schools appeared before the House Committee on Schools and Colleges and presented a number of arguments in favor of amalgamation, the committee did not see fit to consider the matter further this session. It was suggested by some of the members, however, that a bill giving all details contemplated for the merging be prepared and submitted for enactment to the next General Assembly.

As formerly stated, we believe the amalgamation would be for the ultimate good of the schools, and it is a question the doctors of our State should give careful consideration and their co-operation, if possible, before the next meeting of the Legislature.

Tri-State Medical Society of the Carolinas and Virginia.

The fourteenth annual session of the Society held in Columbia, S. C., February 21-22, Dr. J. Howell Way, Waynesville, N. C., presiding, was one of the most pleasant and interesting meetings in its history. An unusually large number of papers were read, and the doctors were extensively entertained. Norfolk, Va., was selected for the place of the next annual meeting, and the following officers were elected: President, Dr. A. E. Baker, Charleston, S. C.; Vice-presidents, Drs. A. B. Knowlton, Columbia, S. C., A. J. Crowell, Charlotte, N. C., and A. L. Gray, Richmond, Va.; Secretary-treasurer, Dr. R. E. Hughes, (re-elected), Laurens, S. C. New members elected to the executive council were Drs. R. B. Epting, Greenwood, S. C., Southgate Leigh, Norfolk, Va., and J. Howell Way, Waynesboro, N. C.

Pavilion at Catawba Sanatorium Destroyed by Fire.

The Latane pavilion at Catawba Sanatorium, Va., was destroyed by fire in the early morning of February 24th, entailing a loss of about \$3,300, partly covered by insurance. The inmates of this pavilion, all men, were assisted to the pavilion being erected by the Catawba Relief Association, where they will remain until other arrangements can be made.

The inmates escaped injury, though many lost clothing by the fire.

Leesburg, Va., to Have New Hospital.

A stock company, composed of some of the leading doctors and residents of Leesburg, has recently applied for a charter, and as soon as it is issued, the necessary stock will be sold to secure funds with which to erect an up-to-date hospital in that town. The proposed stock company has elected the following officers for the first year: President, Dr. W. C. Orr; Vice-president, Dr. John A. Gibson; Secretary, Dr. Truman A. Parker, and Treasurer, H. C. Littlejohn.

Virginia Health Almanac.

The State Health Department has just issued its 1912 almanac, which, in addition to the advice given on health matters gives a series of important "Things for the Farmer to Do" each month. Owing to the popularity of last year's almanac, a much larger edition has been issued this time. Copies may be secured upon application to the department.

Richmond Board of Health Doing Good Work.

Mortality Statistics, 1910, issued by the Bureau of the Census, gives Richmond a good bill of health, when it states that it "possesses one of the most effective sanitary services in the country."

Some Recent Changes in Medical Corps, U. S. Navy.

Passed Assistant Surgeon G. B. Tribble has been detached from the Naval Hospital, Norfolk, Va., and ordered to the Naval Hospital, Washington, D. C.

Passed Assistant Surgeon L. M. Schmidt has been detached from the Navy Recruiting Station, Chicago, Ill., and ordered to the Naval Hospital, Norfolk, Va.

Assistant Surgeons Wanted for Public Health and Marine Hospital Service.

Examination of candidates for admission to the grade of assistant surgeons in the above service, will be held in Washington, April 8, 1912. Candidates must be between twenty-two and thirty years of age, graduates of reputable medical colleges, and must furnish testimonials

from responsible persons as to professional and moral character. The salary attached to this position is \$1,600 and quarters. Promotion is made upon examination.

For further information and invitation to appear before the board, address "Surgeon-General, P. H. and M. H. Service, Washington, D. C.

Dr. J. Fulmer Bright,

Richmond, Va., who, for the past five years, has been surgeon of the Richmond Light Infantry Blues, with the rank of captain, has been promoted by the Adjutant-General to the rank of major, in the medical corps, Virginia Volunteers. He has been assigned to the First Regiment Infantry to succeed Dr. Truman A. Parker, recently resigned.

Drs. Wm. H. Higgins and Fred M. Hodges

Announce that they have opened offices at 8 West Franklin street, this city. Their practice will be limited to internal medicine and clinical laboratory.

Large Number of Insane in State Hospitals.

At the quarterly meeting of the general Board of Directors of the Virginia State Hospitals for Insane, held on the fourteenth of February, reports, including the Epileptic Colony, show a total of 4,600 patients in these institutions, 1,470 of whom are at the hospital for colored insane.

For Sale—Unopposed country practice in Tidewater section of Virginia, with ten room residence, barn, etc., by doctor who wishes to specialize. An excellent neighborhood in fine farming section, convenient to churches and schools. Roads good. Nearest physician, twelve miles. For full particulars, address H. J. K., care this journal.

Obituary Record.

Dr. Severn P. Nottingham,

A prominent citizen and retired physician of Northampton County, Virginia, died at his home at Eastville, that County, February 20th, as a result of paralysis. He was born in 1840, and was a graduate in medicine from Jefferson Medical College in 1861. Several children survive him.

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Original Communications.

THE FAILURE OF PHYSICIANS TO DIAGNOSE HOOKWORM DISEASE.*

By W. A. PLECKER, M. D., South Hill, Va.

When I made the statement before the Medical Society of Virginia, a year ago, that hookworm disease is the most important subject that may engage the attention of Southern physicians, my assertion was received by some with a passing smile of incredulity, marking the owners as being deficient in the full knowledge of the subject.

It is the gross ignorance on the part of the larger portion of the medical profession of Virginia of a subject of first importance, yet so easily mastered as to permit no longer of excuse, that leads me now to point out to you some of the results of this neglect. It is not only the hard-worked country doctor, with but little time, as he supposes, for study, but some who pose as leaders of medical thought in the State, who have been content to limp along five or ten years behind, waiting for the laymen who are being taught sanitation, to give them jolts which will awake them to a realization of their shortcomings.

This paper is intended as a warning of what may be expected if they do not mend their ways. No one appreciates more than I the value of the work now being done to discover the cause and prevention of pellagra, cerebro-spinal meningitis, and other disease conditions which confront us. While our knowledge of these and many other things in medicine is as yet incomplete, why will we, in the name of reason, neglect those things that are not only absolutely proven, but are of fundamental importance to our Southern people?

Many papers on uncinariasis have been read

before medical societies and published in transactions and journals, but it will require many more to penetrate the shell of slothful indifference to every great discovery that requires the thoughtful acquisition of new knowledge and the practice of new methods. Even at this late day we find medical men blind to the life-saving power of diphtheria antitoxin, and to the value of the use of means for the prevention of typhoid fever, tuberculosis, and infantile diseases.

The importance of becoming proficient in the diagnosis and treatment of uncinariasis consists: first, in its—

FREQUENCY.

A survey of the State made by the Department of Health shows most of the territory east and south of Richmond to be rather heavily infected, many spots and counties intensely so. In my own work, recent microscopic examination at random of nearly three hundred individuals, mostly school children, in the sandy belt of Eastern Lunenburg and Mecklenburg, shows sixty-five per cent. of infections, many of them, however, light and unrecognizable by other means. Selected portions of the Northern Neck and Southside counties show even a higher per cent. and more severe degree of infection amongst children. Within a few miles of these points of severe infection, the soil may change to a stiff clay, and the rate drop to ten or even five per cent. amongst school children, particularly those residing in towns where privies are used and soil pollution is prevented. This, I believe, to be the case in localities in the western portion of the counties named. An accurate study is now being made through the examination of public schools. I am personally less familiar with conditions in the Piedmont and Mountain sections of Virginia, but I believe physicians practicing in these localities will be abundantly repaid in the acquisition of valuable information if they will keep the pos-

*Read before the Seaboard Medical Association of Virginia and North Carolina, at Newport News, Va., December 5-7, 1911.

sibility of hookworm infection ever before them, and have the feces examined in every case of obscure diagnosis. Second—

THE INDIVIDUAL CONSEQUENCES OF THE DISEASE.

This varies with the degree and continuance of infection, and the individual susceptibility. Many milder cases show almost no symptoms that might lead you to suspect the presence of the parasites. Yet you will be much gratified as I have been by treatment, when only two to six worms were secured, to find that the individual, especially noticeable if children, will improve in color, weight, buoyancy, and above all, in the aptitude to learn.

In moderate cases you will find the results of anemia and poison generated by the worms more marked. Children are pale, sluggish, weak and undersized. At school they will stand low in their classes, and a large per cent. fail to advance with their grades. They require more effort on the part of the teacher, and hinder the entire work of the school. In this way we are absolutely losing in some counties twenty to twenty-five per cent. of the efficiency of the public schools. Thoughtful teachers of the worst schools estimate that from fifty to sixty per cent. of their efforts are absolutely wasted by this disease, which may be easily prevented and cured.

Can anyone point to a locality in Virginia where the sum of all other infectious diseases equals in far-reaching importance the possibility of this one alone?

Moderate cases at times gradually merge into those of greater severity when all symptoms are accentuated. The complexion becomes a dirty yellow with white splotches, giving the designation tallow-faced. The slight puffiness of the eyelids becomes more general, and the face presents a bloated, stupid appearance. Weakness and apparent stupidity become marked. The patient may gradually give up all useful occupation, and finally become bed-ridden. In a few cases in this country, even death may result, either directly or through intercurrent diseases.

In Porto Rico, where 90 per cent. of the laboring population were afflicted in a severe form, 30 per cent. of the deaths were the result of uncinariasis.

The splendid work inaugurated by Ashford and King is rapidly changing this condition and

gives us hope of ultimately banishing the disease from our land.

Third: You should fit yourself for the diagnosis and treatment of these persons, even though it may not be financially remunerative, because you have, by locating amongst them, made yourself responsible for their welfare, and perhaps are by your presence, keeping away a man who is alive to the situation.

These people do not realize always their condition, and must be taught and persuaded to be cured, and to build and use sanitary privies, which affords the one means of prevention. Every patriotic man owes it to his State to do all he can to improve the physical, mental and moral character of her citizenship, especially when it is in direct line of his work.

Fourth. No physician may lay claim to proficiency, and no man can preserve his self-respect, allowing these poor unfortunate anemics to call him their doctor, and permitting them to go undiagnosed, untreated, and unwarned.

With this introduction, I will now pass on to a consideration of conditions due to uncinariasis, frequently designated and treated as other diseases:

Malaria.—The peculiar condition of anemia, with the miserable color and weakness found amongst the rural population of many sections of the South has for years been attributed to latent malaria, even though no positive history of intermittent fever could be secured.

Use of the microscope in the hands of competent men has failed to find the malarial organism in the blood of these patients, and this cloud which has been hanging unjustly over many sections of our Southland has been lifted. Further use of the microscope has in recent years revealed uncinariasis to be the true cause of our Southern anemia.

The time is fast approaching when the laity even will refuse to accept the diagnosis of malaria as other than a cloak for ignorance, unless backed up with positive microscopic findings.

One of my early patients with uncinariasis was a boy of thirteen, who had gradually become weak until forced to bed. I found him, under treatment for malaria, with a "chill tonic" containing quinine. He was found with an elevation of temperature, but no history of intermission, and with negative blood examination. Thymol brought uncinariae as the

mother described, by the thousand, and wrought a speedy cure.

Similar cases are perhaps as frequently diagnosed—

Typhoid Fever.—Before learning to recognize hookworm disease, I am confident that I permitted such a case to pass into the hands of another physician, afterwards to die.

Recently two boys, where treatment had been refused, though the uncinaria ova had been demonstrated in the feces of all the children, were taken down, one with what the physician supposed was typhoid fever, the other with abdominal pains and indigestion. Having accidentally met him at the house in passing, I suggested that he give both a treatment of thymol then, as they had just been acted upon by a purgative, which he did. They were soon up and about, but the father refused to have these and the other children treated till cured, because, as he stated, his physician remarked later that he did not believe they had hookworm anyway. Having learned not to heed such charges against physicians by men of his class, I wrote to the doctor, but have received no reply, though I assured him that the diagnosis was made in the laboratory of the State Department of Health.

This illustrates several of the difficulties we are up against in the effort to bring the light into dark places. It would be interesting to know how great the falling off would be in typhoid fever reports, if cases were properly diagnosed and treated.

Tuberculosis.—The persistent diagnosis of tuberculosis for hookworm disease is perhaps not often made. I was called in my early hookworm experience to see a man four months in bed with what the family and neighbors supposed was consumption. A physical examination revealed no organic disease, but a clear clinical history of uncinariasis was evoked. A full treatment of thymol was given, and when seen two days later working around his tobacco barn, he described the marvelous number of worms passed.

I was consulted by a lad sixteen years of age for a persistent cough, weakness, and, as his father expressed it, a condition of decline. His physician, an excellent man, naturally feared incipient pulmonary tuberculosis, and gave appropriate advice and treatment. Careful examination with the patient stripped to

the waist showed no involvement of the lungs. The sputum was found free from tubercle bacilli by Dr. Ferguson, of the State Laboratory, but an examination of his feces showed the ova of uncinaria. Appropriate treatment cured him of the hookworm disease, and, incidentally, as was found a month later, of all pulmonary symptoms.

Chronic Dyspepsia will frequently offer you an excellent opportunity to make a hit. No physician practicing upon patients in or from an infected territory should consider his work of diagnosis complete until he has made or secured a microscopic examination of the feces. Numerous cases could be mentioned which have gone the rounds, and finally been cured by a few doses of thymol and Epsom salts.

A striking case of this sort was a man who had been treated unsuccessfully by his home physician, and then spent six weeks of his time and much of his hard-earned savings at a Richmond hospital.

After hearing one of nearly two hundred stereopticon lectures which have been given on sanitation in my territory, and reading a Board of Health Bulletin on hookworm disease, he suspected the true cause of his trouble, and had a microscopic diagnosis of hookworm made by the Department. He then applied to his physician for thymol treatment, and was quickly and completely cured. How many such experiences do our city diagnosticians want before they learn to make a routine examination of the feces?

Chronic Appendicitis. I have found several cases of supposed appendicitis cured by thymol after a microscopic diagnosis of uncinariasis, one after operation which had failed to relieve. Would it not pay to make five hundred negative microscopic examinations to find one such?

Epilepsy.—I do not wish to be misunderstood as recommending thymol for all cases of epilepsy. However, in conversation with a group of three field men at the recent hookworm conference at Nashville, they reported eight patients of this character in whom the presence of uncinariasis was demonstrated, all cured by treatment directed toward that. Similar cases have been reported to me by others.

Puerperal Eclampsia.—In a paper read on that occasion by Dr. Rowan, of Alabama, he recorded his observation that country women in hookworm localities are much more prone

to puerperal eclampsia than those living in towns and less exposed to infection. He attributes this to the anemia accompanying uncinariasis. Similar observations were brought out by others in the discussion. If the supposition that this disease is a result of auto-intoxication be true, we have a similar condition produced by the poisonous substances supposed to be secreted by these worms. Without being in position to verify these conclusions, I offer this as a promising field for investigation. With this danger in addition to the harmful effects in general to the puerperal mother and her child, we are surely called upon to diagnose and cautiously treat this condition if in a marked degree. Ashford reports eleven cases treated, with perhaps one abortion. Dr. Rowan also reports four cases of supposed *chronic rheumatism* cured by hookworm treatment. Also two cases with similar results of *supposed tuberculosis*, one with dropsy.

During the discussion various other cases were mentioned, one of supposed *gall-stones*, with jaundice, cured by thymol and the expulsion of uncinariae. Cases of *eye-strain* caused by hookworms and cured by their destruction were mentioned. An infected mother with severe anemia was treated, and her eleven-months'-old nursing child was speedily cured of *malnutrition*. Dr. Smith, of Little Rock, reported a thirteen-year-old girl who was sent to a Florence Crittenden Home in Little Rock for anticipated confinement. She was found to be a virgin, suffering with hookworm disease, with abdominal swelling, cured by thymol and sent home.

Pellagra is not caused by uncinariasis, but discoloration of the skin simulating it is. Also certain feeble mental symptoms, all of which may be cleared up by thymol. Is it possible that errors in diagnosis have been made in such cases by men whose diagnostic tests do not extend to a microscopic examination of the feces?

Bright's Disease.—I have met a boy fifteen years of age with swelling of the face from uncinariasis, hurriedly diagnosed as "kidney disease," whatever that was supposed to mean. Examination of the urine gave negative results; of the feces, positive. Such cases are sometimes diagnosed as *Heart Disease*, especially when dyspnea is present from anemia. An anemic murmur may also be heard. I wish

to call attention to the extreme rarity of such conditions in children from any other cause than uncinariasis.

Symptoms of *Neurasthenia* and a whole string of other nervous disorders may be made to disappear like magic by thymol when uncinaria are found as the exciting cause.

The symptoms of uncinariasis are so manifold that I will not attempt to dwell upon every possible error, neither would I create the impression that the indiscriminate use of thymol will be a panacea for all ills. In fact, we may, and frequently do, have the joint presence of this and any of the diseases described.

You will always do well however to first eliminate uncinariasis as a causative factor in any and all obscure conditions, particularly if the patient has resided in or visited territory of infection.

I wish especially to impress upon city men to whom patients are frequently sent as a last resort, the importance of making a microscopic examination of the feces as much routine practice as that of the urine. I could relate to the credit of some of these careful men positive results when country physicians have referred hookworm patients to them for diagnosis and treatment. The only safe method is to call for a specimen of feces along with the urine. Its examination for the ova of intestinal parasites of all kinds, under low power, is much quicker and easier than even a partial urinary analysis, and far more certain in results. No man would attempt to practice medicine without stethoscope and test tubes. Careful physicians have in recent years added the routine study of the blood pressure of all pregnant and elderly patients with most satisfactory results. The combined result of these methods of precision does not equal in importance the knowledge acquired by the use of the microscope in making fecal examinations in territory infected with uncinaria, especially when dealing with children.

Today no physician, especially the country one, can lay claim to being well-equipped without a microscope and the simple knowledge required to make these examinations. If, however, any prefer not doing this work themselves, let them remember that specimens may be sent to the laboratory of the Virginia Department of Health with a two-cent postage stamp, in the excellent mailing cases supplied.

The four field men, besides doing a vast amount of educational work, have sought out and treated several thousand of these patients already, and hope to make even a better showing before the end of another year. It is manifestly impossible, however, for these men to reach the one hundred thousand or more of these unfortunates scattered through portions of the State.

The hope is that the profession at large may be aroused from its state of lethargy and induced to take up seriously and in earnest its share in the greatest sanitary effort ever attempted.

The work of curing this disease and stopping its spread by teaching our country people to prevent soil pollution through the construction and use of sanitary privies is of fundamental importance, and means a future uplift for the South possible by no other means.

SUMMARY.

1. Uncinariasis is the most widespread of the serious diseases afflicting the Southern people.

2. It causes more disability, and consequent financial loss, than any other infectious disease; perhaps more than the trio: typhoid, tuberculosis and small-pox combined.

3. Uncinariasis in childhood is the great cause for the poor physical condition and lack of school training of many rural dwellers, both youth and adult.

4. That a large proportion of the city and country doctors are not yet aroused to the importance of always suspecting hookworm infection, and looking for it, by microscopic examination of the feces for uncinaria ova, is evidenced by the great number of errors in mistaking this for other diseases.

5. Numerous instances have been discovered, when uncinariasis was mistaken for, or was a factor in causing tuberculosis, typhoid fever, malaria, chronic dyspepsia, appendicitis, epilepsy, heart and Bright's disease, puerperal eclampsia, chronic rheumatism, gall-stones, eye-strain, neurasthenia, "dropsy," malnutrition of a nursing infant through its mother, and has even been diagnosed as pregnancy in a virgin.

6. Education of teachers, legislators, and the public in the one sure method of prevention, by avoiding soil pollution through the construction and use of sanitary, fly-proof privies, is

the work of the medical profession, and constitutes the widest field for usefulness now open to all.

7. Prevention of soil pollution will prevent ground-itch, which is the beginning of hookworm disease, and will at the time be effective against the spread of typhoid fever.

8. Securing this first great step in decent living will make all other sanitary advances easy.

DISEASES AND DEGENERATIONS DUE DIRECTLY TO ALCOHOL.*

By T. D. CROTHERS, M. D., Hartford, Conn.,
Superintendent of Walnut Lodge Hospital, etc.

The time has passed for the discussion of theories, personal opinions and traditions concerning the value of alcohol as a beverage, food or medicine. The accumulation of facts from research work in laboratories, hospitals and accurate clinical studies, supported by practical experience, have taken the subject out of the field of theory, opinion and speculation.

Active practitioners, surgeons and specialists find that every new study of causes and conditions brings into increasing prominence the intimate relation of alcohol, as an active and predisposing agent, in a great variety of diseases and degenerations.

My purpose is to outline some of the more prominent of these, which are traceable to a very large extent to the use of alcohol, and indicate their importance in all the questions of diagnosis, prognosis and treatment.

Alcoholism.—This term implies the traditional theories of vice, wilfulness and moral weakness. Even among medical men, it is regarded often with contempt, and the question of disease considered insignificant. In reality, the symptoms are most pronounced of delirium, paralysis, poisoning and acute irritation, anemia and disturbed organic and functional activity, and there are no causes known which will produce the same complex symptoms.

Lead, arsenic and other mineral substances are capable of producing poisoning with symptoms that resemble it, but when compared, there is a wide difference. The alcoholic exhibits complex symptoms which vary in different persons, and yet they follow a uniform line and progressive movement that is unmistakable.

*Read before the Tri-State Medical Society of the Carolinas and Virginia, at Columbia, S. C., February 21-22, 1912.

Acute intoxication with or without delirium is always associated with stupor, and may be due to other causes than alcohol, and yet, alcohol as a cause is marked by some specific, special symptoms that are not easily confounded with others.

Alcohol may be a symptom, and not a special exciting cause, hence the symptoms may differ. The most pronounced types of alcoholism are persons who use spirits steadily, often in small quantities. Such persons are continuously poisoned, and whether aware of it or not, there is marked organic deterioration and perversion of the cell and tissue, which break out in some form or other, sooner or later.

A healthy person may take large quantities of alcohol and become acutely poisoned, but this ends in sobriety and restoration; but the man who drinks spirits, even in small quantities, steadily, has no period of rest for recovery and relief.

Alcoholism describes persons suffering from most complex degenerations as the direct result of the one specific cause.

Inebriety.—This term, like that of alcoholism, is not clear to many persons, and is used in a confusing way, but literally it is the name of a class of symptoms, pointing to a disease, which follows from the use of spirits taken with great irregularity and at long intervals.

The period between the use of spirits is one of apparent health in which no spirits are used, and the patient seems to be healthy and well. Then suddenly some distinct obsession provokes the use of spirits up to the point of excess, marked by a variety of symptoms which are termed in a general way, insanity.

There is a distinct storm session, resembling epilepsy in intensity and impulsiveness, which, after a time, passes off. This drink period may come on suddenly or slowly, beginning in an insignificant way, and then gradually growing up to full development, marked by irritation, delirium, anesthesia, then narcotism and a period of revulsion, disgust and practical immunity.

The free intervals may be uniform or irregular in their duration, but after a time become shorter and more marked. The attacks apparently seem due specifically to alcohol, and yet back of that, there are pathological and psychological conditions which provoke and appear in

the demand for the relief and narcotism of alcohol.

There are some physical and psychical centers of irritation and psychasthenia which precede these attacks.

Literally, the use of alcohol is a symptom, as well as a cause, and the first use creates an intense desire for the continuation of its use. Some profound disturbances of both functional and organic activities come over the system, and find relief in spirits, which brings anesthesia and rest. There is in this a psychical impression that nothing can take its place, and bring such positive help. Innumerable instances indicate that both the taste and smell of spirits are repulsive, and its effect dreaded, and yet the impulse to drink is irresistible.

Such persons go down through life held in the grip of a pathologic and psychopathic force, which, with or without any active exciting cause, gathers and breaks at intervals, in profound toxemia.

Here is a field for medical practice and medical help that is literally unoccupied, except by quacks and a few pioneers. These two diseases, alcoholism and inebriety, while closely allied in symptoms, differ widely in causes, and yet follow a uniform line, and move with a positiveness that can be predicted and studied, and yet all date to alcohol as the active and predisposing cause. They are both mental and physical conditions and the possibility of cure and prevention, when known and treated by rational means, is to say the least, startling.

There are a number of diseases which follow these conditions, that are called terminal stages, marked by acute inflammatory infections in the organs. These appear from a study of a large number of cases, and are put down in the mortality list without reference to the actual causes.

Pneumonia.—Statistical studies of fatal cases of pneumonia indicate from 50 to 70 per cent. in which there is a history of excessive use of spirits. These are the highest and lowest estimates, and hospital statistics amply confirm them. Pneumonia, nephritis, meningitis and gastritis are terms that describe the terminal stages of the alcoholics and inebriates.

The late Dr. Richardson, of London, called these cases pneumo-paresis, in which paralysis of the branches of the pneumogastric nerves occur, dating from some central cause in the me-

dulla, resulting in sudden palsy of the capillaries, terminating fatally in a few hours. These cases are by no means uncommon. Both inebriates and alcoholics are particularly liable to sudden death from pneumonia. The real causes are not understood, and are usually ascribed to chills and change of temperature.

Acute clinicians and surgeons make a guarded prognosis where a person with an alcoholic history is taken ill with pneumonia.

Profound intoxication from spirits act on the vital powers of cell and tissue, suspending them and diminishing the resistance to congestions and the growth of germs. The same thing occurs in nephritis, with a sudden breaking down of cell and tissue from acute inflammatory action. Gastritis and meningitis manifest the same forms and conditions.

The anesthesia of alcohol has suspended their functional activities beyond the point of restoration and collapse and inflammation follows.

Cerebral Hemorrhages.—The so-called apoplexies, shocks, hemiplegias and other forms of general and local paralysis are common terminal diseases in persons with an alcoholic history. Here statistics show a large proportion of fatal cases from this disease due to this one cause.

There is a great wealth of illustrative cases in this field.

The direct effect of alcohol on the vasomotor nerves in diminishing their contractile power and increasing the tension, is a very active predisposing cause. All persons who use spirits show a high degree of arterial tension and sharp tendency to congestions.

The arteries in the alcoholic and inebriate are practically vulcanized; the muscle cells being replaced by fibrin and the walls rendered thick and hard. In all probability, this excess of fibrin and deposits in the walls of the arteries extends to all the other organs. The brain in particular suffers, and, as a result, fractures occur with local or general palsies.

Cerebral hemorrhages should always suggest alcohol as an active or predisposing cause, and the question of treatment should turn on this fact. Illustrations are very common in everyday experience of this condition, and while not always fatal, the invalidism and defects which follow are serious.

Neuritis.—Inflammations and degenerations of the neurons of the terminal nerves (called

rheumatism by many persons) is one of the most common terminal diseases that follows from the use of alcohol. Both the alcoholic and inebriate rarely escape this affection, although referred to other causes.

The fact that the toxins from spirits circulating in the blood have a particular affinity for the brush ends of the nerve terminals, and set up inflammatory foci, is clearly recognized. The pain and irritation is reflected along the muscles and in distant parts of the body.

Cramps in the muscles, continuous or spasmodic pains along the nerve trunks, hyperesthesia or anesthesia of the muscles are the most common symptoms. Alcohol seems to be the most common of all the causes, and nearly all inebriates and alcoholics exhibit symptoms of this condition. The almshouses and the insane asylums have a great variety of illustrative cases, and the incurables in every town and city with an alcoholic history, bring out the fact of local inflammatory erosions of the nerve terminals.

There are other prominent diseases and terminal degenerations which refer specifically to the toxins of spirits and the action of alcohol on cell and tissue. Modern literature and recent text-books contain such names as alcoholic epilepsy, alcoholic mania, dementia, paresis, idiocy, and so on. The word alcohol is used to describe the most common and prominent cause. These indicate beyond question the tremendous advance in the etiological studies of the exciting and contributing causes of disease. At present they only outline a few of the conditions directly resulting from alcohol.

Beyond this, there is a large unknown range of active and contributive causes which enter into the production of disease, awaiting exploration, with an equal promise of revolutionary discoveries, equal to that of germ diseases.

Degenerations Due to Alcohol.—This term describes morbid changes, reversions from the normal, the breaking down of cell and tissue and the promotion of diseased conditions and susceptibilities to disease. In a general sense, it must be understood to mean, both functional and organic diseases and tendencies to break down.

Among the very common degenerations following from the use of alcohol is its effects on cells and neurons. First, the dehydrating qualities of alcohol, outside of its oxidization,

fall most heavily on cell growth and cell activity.

The sudden abstraction of water changes the form and structure of all cell life. Persons who have died under the influence of spirits show cell wreckage, distortion, corrugation and shrunken cells, both of blood and serum.

Persons intoxicated show these cell changes, which pass off after the anesthesia of alcohol has disappeared. Laboratory experiments on animals that are given spirits, show marked erosion of cells and neurons, peculiar to those who receive spirits, and not seen in others.

Second. There is a distinct anesthetic action on the cells and their activity. Their movement is suspended, checked and diverted, and this is also measurable by laboratory experiments. From large quantities of spirits, cell anesthetics may extend over large areas, from small quantities, the effects are not noticeable, and yet they exist.

Third. There are changes in the metabolism, shown in the plasma, and chemical changes in the food products. The normal conditions are broken up. There is an excess of fibrin and fats. The oxidizing processes are changed and new products are formed which become toxic and are carried to all parts of the body.

In the alcoholic who uses spirits continuously, these changes are marked by low vitality, deranged heart's action, disturbed nutrition and faulty reasoning. The beer drinker who uses small quantities of beer, loaded with ferments and foreign products, shows excessive development of fat over the abdomen and about the heart, with morbid growths, deposits and perversions of fibrin and fat compounds.

The excess of fibrins in the walls of the arteries bring about changes that tend to derange and pervert the normal rhythmical flow of blood plasma. Very interesting experiments, or rather utilization of these facts, are carried on in dog kennels, where by feeding small quantities of alcohol, the growth of the animal is suspended and this carried on for one or two generations develops in a new breed of dwarf dogs. The toy dogs are all the direct result of breeding and the use of alcohol to prevent growth.

This is farther illustrated in emigrant women and others, who, as children, have been given wine and beer in early life in place of food. Their impaired growth and vigor is a

striking illustration of the degenerate effects of alcohol.

A clinical fact of great significance is the sudden flush noted in the capillaries of the face from the ingestion of a small quantity of spirits. This is a literal palsy of the vasomotor centers. Later, where spirits are taken continuously, it becomes more or less permanent, and extends to the nose and cheeks, and is facetiously called "rum blossoms."

In reality, it is not a local condition, but extends to the entire capillary system, and is most significant of general vasomotor paralysis and deranged circulatory action.

The hardening of the walls of the blood vessels may result in a blocking of the currents, cutting off the nutrient supplies in certain areas, followed by anemia and hyperanemia.

It would be difficult to forecast the general or special degenerations following from these derangements of the circulation, and yet it is clear that profound changes exist, are going on, and are possibly localizing in certain sections.

Another clinical fact is not often recognized that in addition to the alcohol taken in the system there are chemical and metabolic changes which result in new toxins and compounds that still farther increase the derangement.

The term auto-intoxication describes conditions that exist in all cases, although not recognized. Nutrition shows this in the pronounced changes and disturbances, and gastritis is a name for the effects of direct toxic agents taken with and formed from the action of alcohol.

The derangement of the intestinal canal brings further evidence. The number of foreign products seen in the urine are indications of this injury. Thus indican, cholin, lecithin and phosphorous compounds with nitrogen-sulphur excretions are all toxic products formed and thrown off.

Albuminuria and glycosuria, so prominent in extreme alcoholic stages, are still further evidences. In delusional and convulsive conditions, both the urine and blood exhibit the presence of toxic bodies referable to alcohol.

Alcohol destroys the resistive power of the phagocytes, and this is followed by increased susceptibility to infectious diseases. Practical experience confirms this, particularly in

fatal cases, following from epidemics in persons who have used spirits.

In surgery, operations of all kinds are less successful and more complicated where the patient has used spirits. Anesthesia on the operating table is more perilous and convalescence slower and more uncertain in these persons. These are only some of the pronounced facts, significant of degenerative changes, directly traceable to alcohol.

There are a large number of cases in which the symptoms of degeneration are obscure, and yet, clearly present. Such persons later pass into the penumbra of insanity with or without exciting causes. The fact of having drunk spirits is an unmistakable indication of lowered vitality, increased susceptibility to disease of all kinds. Studies of fatal cases among mill operatives and men in the transportation business bring out this fact. Persons who are injured by blows on the head, broken bones and lacerated wounds that are of a trifling character, exhibit grave symptoms and fatality that is unusual and startling. Further inquiry shows that they are alcoholics and inebriates. The presence of an epidemic shows unusual gravity and fatality in persons of this class. The sudden deaths of apparently vigorous, strong men, from obscure and insignificant causes have the same history, which points unmistakably to some form of degeneration, predisposing and encouraging this condition.

The great borderland degenerations and obscure diseases called paranoiacs, neurasthenias, and other vague names, in which the symptoms are entirely out of proportion to the supposed causes, when examined, date back to alcohol as a cause, both exciting and contributing. There is a wealth of illustrative cases and facts in this field which have not yet been studied except in individual instances.

There is one conclusion that forces itself with startling significance on the minds of every practitioner. Here is a field of causes and conditions following, with possibilities of medical help, prevention and correction that is practically unrecognized.

Armies of laymen and reformers with a dim conception of the danger from this source are making most herculean efforts to overcome the evils entirely from a moral and theological point of view. Recently, unscrupulous quacks, with claims of specific remedies and results

that border on the miraculous are occupying this field, seeking to take advantage of the feeling of alarm and possibility of medical help that is growing in all sections.

The entire problem is a medical one, requiring the highest kind of scientific skill and discernment to trace the results from certain causes and point out means and methods of cure, and yet the profession as a class stand aloof, and look on the efforts of laymen and quacks with distrust and doubt. The physician, of all others, should be the teacher and authority concerning the use of alcohol in every community. The problem is a medical, hygienic and scientific one. There are no ethics or morals in this question of facts. There are no disputed questions of prohibition, license, control and punishment of the victim. These belong to laymen and non-experts, who know very little of the great underlying causes.

Empiric methods and means, with marvelous results, are parts of the history of every great advance in science. A new field of medical work is open at our doors, and quacks and reformers are forcing it upon public attention.

Great armies of alcoholic diseased men and women are seen in every community. They are mutely calling for help. They appeal to the medical men for means of relief, cure and prevention, and like the Levite, we pass them by on the other side.

There are no theories in this. It is a question of facts and their meanings, and the medical profession is called by every consideration of duty and obligation to study and recognize these conditions. The few pioneers in the field show the possible means of prevention and cure from a larger knowledge and more thorough understanding, and are calling everywhere to their brothers in the profession to come up and occupy this new field of practice.

This is the imperative need of the hour, and this is the new land for medical study at our very doors, white for the harvest with possibilities beyond any conception of the present.

THE DOCTOR AND HIS INFLUENCE.*

By IRA M. HARDY, Washington, N. C.

There is a marked difference between the physician of yesterday and of to-day. The latter, as a rule, is less confidential, less sympa-

*Read before the Seaboard Medical Association of Virginia and North Carolina, at Newport News, Va., December 5-7, 1912.

thetic in his relations to the family, and more commercially inclined than was the former.

While great advance has been made in the theory and practice of *materia medica* and its handmaidens—chemistry and surgery—putting them on a higher plane than ever before, yet there is apparently something lacking in the general practice of medicine in these more modern days. This element is the human element, the keen interest which the old physician felt in his patients, irrespective of any pecuniary consideration he may have had in return for time, treatment and medicine expended.

He was practically the confidential friend and advisor to the household. Indeed, he was even more than that; often-times he was the lawyer and business mentor of the family. He stood in closer confidential and friendly relations to the family than even the priest, minister or lawyer. He was, in fact, a walking epitome of the entire three with medicine and nursing added. His calls were not always strictly professional in the sense of the expectation of fees, but were often made to the households in the spirit of humane and friendly interest, and which had no immediate requirement of his professional services. He was the friend of everybody, and everybody was his friend. Every birth at which he officiated, if the child lived to reach adolescence and beyond, added a new friend and patient to his already extended list. His very presence in the household at exigent periods imbued its members with faith and hope, and his kindly, unselfish ministrations, deep interest and tender sympathy were half the battle in conquering lingering, obstinate disease. His presence in the home meant solace and comfort, and in his intercourse with men and in his general relations with women, he was the quiet, dignified, kindly gentleman. He represented the highest type of the morality, social excellence and solid integrity of the community, and in his unobtrusive, quiet way he wielded more influence than did the minister or the lawyer. Sad is the period of this passing influence, to those of us who realize the truth of it.

The fathers and mothers and the grand-parents of present-day generations owe much to his humanity and skill, which, according to his light and environment, were bestowed where needed with no unstinted measure. He probably did not know more of the theory of his profession than the law allowed him, but in hu-

man nature, kindly sympathy, old fashion nursing, psychology (then known under the indefinite term of human magnetism), in practical experience and plain common sense, was he not more than the peer of his more modern representative? He was always safe, sound, logical and practical in his methods of treatment. His great object was to relieve, if possible, physical, mental and spiritual suffering, and to cure disease in accordance with the medical code set before him, interpreted by experience and common sense. He ushered into the world in comparatively painless way hundreds of children who afterwards became noble men and women, and soothed and eased the passage of perhaps as many more "to that bourne whence no traveler returns."

He was the lover of children, and of clean, wholesome, right living; fearing evil as the plague, worshipping God in simplicity, and extending to his neighbors a kinship of interest and feeling as honest and heartfelt as it was nearly divine. He took pride in the boys and girls of his community, for they were largely his children by accouchment and godfathership. Their development, health and sanity were almost as much due to him as to their parents.

In those days the catalogue of diseases was more limited, and their treatment more simple, direct and heroic. The medical vocabulary was less comprehensive than now, the formulas less complex in number, quantity and variety, but the faith of both the physician and patient in their remedial and curative effects was almost equal to those held with respect to Holy Writ.

With the disappearance of the old-time practitioner of medicine have come the modern specialists, more highly trained and skilled in their particular lines than any of their predecessors, but lacking much of their unselfishness, humanity and common sense.

In the past four or five decades, medicine in both theory and practice has taken wondrous strides as regards the range and character of the drugs, chemicals, etc., adopted or recognized as alleviative and curative agents; also in the discovery and use of antitoxins, anesthetics, and the better understanding of the anatomy, physiology and psychology of man. The circle of *materia medica* has been rapidly widening in all directions, and surgery has taken front rank as a positive science. Hygiene and nurs-

ing have also been moved to advanced positions.

While research has been steadily going on in the domain of diseases and their causes with a view to their alleviation and utter banishment, no less persistent efforts are being made to prevent them by looking beyond the pale of the sufferer to his or her parents. Herein comes the study of heredity, atavism, psychology, to which the modern physician, be he general practitioner or specialist, is forced, as it were, to give respectful consideration if he expects to succeed in his profession. This brings him naturally to the study of the pre-marital and marital relations of men and women; and also of those without the confines of the wedded fold—the mature and immature—as evidenced in indiscretions, excesses, and venereal infections. This course of investigation leads the physician into the study of the almost miraculous powers and relations of the procreative system.

The reproductive system, the holiest, most beautiful work of the Divine Artificer, in normal health, through ignorance, viciousness, abuse and misuse, becomes indirectly, if not directly the father and mother of nine-tenths of the ills to which humanity is heir. It is to and through this source almost wholly that we are enabled to arrive at the causes of children being born and bred mentally, physically and morally defective. It will take time, with such other measures as the aid of the State and people will afford, to prevent the bringing into the world of at least some of that increasing mass of defective and deformed humanity, which if not finding its release in early death, will ultimately become such a burden upon the State that it will be beyond us to care for them. It has already filled to overflowing our blind institutes, deaf and dumb schools, reformatories, almshouses, insane asylums, and is reaching further still to the jails and penitentiaries; likewise it includes a large wandering mass of mild and harmless degenerates without their pale, in addition to almost numberless defectives, located in the homes and in attendance at the public schools.

Herein lies the great field of endeavor for the modern physician, the humanitarian, the philanthropist, the altruist, and the people of the State.

We have our private and organized charities, motherhood and settlement work in the cities and thickly populated communities. Our

churches and missions, hospitals and sanitariums are all doing, in their way, effective work for the uplift of unfortunate humanity. But aside from all these laudable endeavors, we have a large number of defective children born every year, to which the State should not permit unfortunate birth through the means of enforcing normality in both sexes as one of the legal requirements of marriage. In the present State of society, this can only be brought about by the systematic education of our youth in the lines of mental, physical and moral normality. This achievement will require patience, time, unflagging effort, and the expenditure of considerable funds by the State. In other words, the people, especially the youth of the State, should have indelibly impressed upon them that one of the requirements of the State for normal, rational matrimony is—"a sound mind in a sound body." The people educated to this line of thought will manifest itself in normal offspring.

But the immediate work in hand for the more advanced and humanitarily inclined people and physicians, under State auspices, is to make every rightful endeavor to ameliorate the condition, and to redeem, wherever possible, the unfortunate little defectives, and, as near as possible, to make future normal men and women of them. That this can be accomplished in large degree with credit, with lessened ultimate expense to the State, with ten-fold advantage to the community, and immeasurable good to the helpless unfortunates, is evidenced by the successful procedures on this line in some of the other States. I may mention, for example, New Jersey.

We have spoken at some length of the old-time medical practitioner, and have so far touched but lightly on his modern brother and the specialist. This being the golden era of the commercial age, and the struggle for survival of the fittest being intensely strenuous, it is not much to be wondered at that the medical, like other professions, is measured by the financial success it commands. Such being the fact, time and inclination for the exercise of its merciful and charitable instincts are factors of but little moment in the success of the more advanced medical practitioner. Altruism has no abiding place in his mental and moral make-up. "The almighty dollar" is too often the game, and in the amelioration of suffering, indigent human-

ity has little consideration. However, this is only in part true of a portion of the fraternity, who have subordinated their high and holy office to the cupidity of Mammon; these are a disgrace to humanity and to the profession.

Happily, on the other hand, there are thousands of unselfish and unmercenary, but diligent and faithful workers, in the fields of *materia medica* who value the success of relieving human suffering more than mere monetary gain. This class of physicians spend their lives and talents in the interests of achievements for the benefit of their afflicted kind, which exalt them to a plane far removed from selfish or unworthy considerations. Their advice and example are almost Christlike to the suffering in the community in which they dwell. Such men honor and ennoble the profession of medicine, and bring it up out of the sloughs of selfishness and cupidity, and exalt it to the plane of "The House Beautiful." "They are the power behind the throne" of the law, and, next to Nature and the Creator, are the arbiters between health and disease, between life and death. Through such grand men in the past has the divine healing art been ennobled, and in the present and future it will be still further extended in its beneficent results, as humanity advances in the progressive scale of civilization.

The aim of these students of humanitarianism is to banish and to prevent disease in all its varied forms—to make human life normal in its beginning, maturity and quiescence. They are, indeed, not only exponents of the natural, moral and civil law, but the bulwarks for the future betterment of the human race.

Health and normal development are godliness, disease and abnormal development are sins against God and mankind. These two opposites are the basis of the living world of to-day, and have been from the dawn of history. It has been the eternal fight between the normal and abnormal man since the time of the dispersion of mankind into different races. Civilization, society and pseudo-Christianity have always taken the abnormal side of the question in defiance of Holy Writ and the command of God to multiply and replenish the earth with men born in the image of the Creator himself—which, correctly interpreted, means, I believe, that normal men and normal women, when fully normal in all their functions are Godlike, and He is well pleased.

THE METHOD OF INSPECTING PUBLIC SCHOOLS IN THE CITY OF NORFOLK.*

By C. LYDON HARRELL, M. D., Norfolk, Va.

The history of inspecting public schools is more or less familiar to all of you, as it was started in France as early as 1833. Its development was slow but sure, the first organized system of medical inspection superintended by salaried physicians having been inaugurated in Brussels, Belgium, in 1874; thence in Paris in 1879. Since that time it has made rapid progress throughout all Europe, and spread into Egypt, Chili, Japan and Argentine Republic, the latter country being credited with having one of the most complete and efficient systems of school inspection in existence. In 1894, Boston began to inspect its public schools, this being the first trial in America. New York City soon followed suit in 1897 by appointing one hundred and thirty-four medical inspectors for public schools; now it is being adopted by School Boards in nearly every State and city in the Union.

Though it is in its infancy in Norfolk, it has by far passed the experimental stage in the Northern and Western cities, and has proved to be a great asset to the child's progress in school and to his general health.

There are as many methods of inspecting schools as there are cities that have adopted the plan. The method used in the schools of Norfolk was drawn up after a careful study of the methods used in the largest cities in the United States, but following more closely the method used in the Berkley schools of California, as this seems to be the most suitable to our needs and conditions. It is my purpose to explain this method and give a few obstacles that we have to meet every day, hoping to get better co-operation from our fellow-practitioners, without whose co-operation only a few children would resort to treatment. *Unless the children found defective are treated, the prime object of medical inspection will be a failure.*

In this city there are five inspectors, and each inspector has a nurse. The schools are divided up so that each physician has about forty-two school rooms under his care. At the opening of school in September we make a general inspection in all schools, looking for contagious diseases, try to catch up with those who have

*Read before the Medical Section of the Norfolk County Medical Society, at Norfolk, Va., February, 1912.

evaded the vaccination law, see that the seats are properly adjusted, and inspect the buildings as to their general sanitary condition. The chief things we have to contend with at this time of the year are pediculosis capitis and impetigo; where cases of pediculosis are found, the nurse is instructed to go to the child's home and state to its mother the condition which the medical inspector found with her child, and request her to get the child's head clean or take it from school.

After this work has been completed, which requires a little over two weeks, we begin our regular physical examination. The teacher fills out this card—"Form 4"[†]—and marks the defects that she has observed from time to time in the room. We take the child in a private room accompanied by the nurse, first looking for skin eruptions, and try to detect the cases with crooked spines and round shoulders; we then examine their teeth, nose, throat, and the nurse tests the eyes and ears. I always give instructions to the child regarding cleanliness, especially of the hands and teeth.

When a child is found with defective teeth, this written notice—"Form T, No. 17"[†]—signed by the medical inspector is sent to the parents, stating that their child has decayed or crooked teeth, and requests them to take their child to a dentist for treatment as soon as possible. We never suggest what should be done or recommend any particular dentist. In case we find enlarged tonsils or nasal obstruction which we believe is giving trouble, we send this card—"Form T, No. 16"[†]—marking the defects found and requesting the parents to take their child to their family physician, or specialist whichever they prefer. In case the nurse finds some defect with the eyes or ears, this card—"Form T, No. 19"[†]—is sent, signed by the principal, nurse, and medical inspector. In cases where children are found very badly defective, needing immediate attention and from uneducated parents, the nurse goes direct to the home of the child and tells the parents the condition that has been found and impresses upon them the importance of having them treated at once. In case we find an acute contagious disease, the child is immediately sent home with a notice stating the disease suspected; the nurse also goes to the home and gives the necessary instructions to the parents. By these instructions

we mean the danger of the disease in question, the precaution that must be taken, and request that they will consult their family physician at once. A duplicate of this slip is sent to the department of health and one put on file at the school board office. This child being excluded from school is not allowed to return until he gets a certificate from the board of health stating that he is free from any, and all, contagious diseases.

When diphtheria is suspected, a culture is taken from the throat and sent to the health department in addition to the other data. When contagious diseases are found, in order to prevent a spreading of the disease, we reinspect the room in which the case is found two or three days in succession.

Since the mid-term examination we are re-examining all failures and trying to locate where possible the real cause of the child's failure; the nurse also goes to the homes of these children to learn the cause of irregular attendance—if there has been any—why some have dropped out of school, and to ascertain when possible if the child's surroundings at home have had any influence over its progress at school. It might be interesting to state that of the failures that came under my observation during this first half term, 83 per cent. had physical defects, some, one defect, but a great many had two and three defects each, only a few of which had been corrected.

We are also applying the Binet Measuring Scale for Intelligence to see if the child is mentally deficient. In the near future we hope to have a room set apart in each school for the repeaters and mentally deficient children.

Like everything else with any true worth, medical inspection has its puzzling problems to overcome before success is assured. It is comparatively new to the laity of Norfolk, and until they are educated to know the bad effects that follow diseased tonsils, and adenoids, and defective eyes in children that go untreated, the work is not going to be received in the proper spirit.

A number of physicians in town are not in sympathy with the movement of inspecting schools; this has been a great hindrance in many cases that have come under my observation. A child goes to the family physician, and the physician says, "Why, you have no trouble worth speaking of—go on back to school." The

[†]These cards could not be used here for lack of space.

child goes untreated. Probably that child may not have had much trouble, and if this statement made by the family physician stopped at this particular case it would make but little difference, but it goes further—the child goes to school and tells his playmates that he has been to his doctor who said there was nothing the matter with him. In all probability several children that need attention badly are influenced not to consult a physician at all. So the family physician can be a great help to us and to medical inspection, if he would only speak of medical inspection in an encouraging way, and uphold the work rather than knock it every chance he gets. We make some mistakes, no doubt, but you must remember that each inspector has about two thousand children to examine, that his examinations must be complete and all reports be turned in by the first of February; consequently, we cannot give the attention and time to each child we should.

Further, a good many of the parents are poor and unable to give their children the attention necessary.

It is alarming to see great numbers of poor children crowd into our schools with their nasopharynges filled with adenoid tissue, whose throats are almost closed with enlarged and diseased tonsils, with teeth so badly decayed that pus can be pressed from the gums. Some of these children are twelve or thirteen years of age and have never had their primary teeth drawn, their permanent teeth appearing as a second row on the side. Many of these also have defective vision, and their parents not able to give them the proper medical attention. A public clinic is badly needed, where poor children can go and get the necessary treatment free of charge. Until such provisions are made, medical inspection is not going to be a complete success, for it is among this class of people that inspection is most needed.

311 Taylor Building.

THE SUB-NORMAL CHILD IN SCHOOL.

By M. P. DOYLE, M. D., Norfolk, Va.

One of the greatest problems of to-day that confronts the educational world is the sub-normal child. By sub-normal I do not especially mean a child below the average in mentality, but a child who is unable to keep up with the

course of study or grade which experience has shown to be best suited to a child of a given age.

Modern investigation has proven that a very large percentage of repeaters or laggards are not, as previously thought, mentally deficient, but owing to some physical defect, which, as a rule, can be corrected, are unable to get a clear perception of what is being taught. Take, for example, a child who has enlarged tonsils and adenoids—a combination that is very often found—such a child, as a rule, is deaf to a greater or less extent, and is unable to clearly comprehend what the teacher is saying.

How can you expect this child to keep up with his fellow-classmates who have normal auditory powers? Or take a child who has some defect of sight, and is thereby unable to perceive what is on the board. It is impossible, as you can readily see, for such a child to form a correct picture in his mind of a letter, word, sentence or object, as the case may be.

Furthermore, a child who has his nose and throat obstructed by adenoids and enlarged tonsils is unable to take in a sufficient amount of oxygen, is usually pale and anemic, and never enters into either work or play with as much vigor as a healthy child. He is also more susceptible to the many disorders of the respiratory tract, as well as various other diseases, specially the contagions and infections, and in many instances he loses a considerable number of days from school during each term. How can we be surprised at such a child for falling behind in his class, later becoming discouraged and not trying to keep up, and in a few years—owing to the fact that he is so far behind—pride will cause him to give up school altogether. The same may be said of the various other defects found.

In many cities of the North where medical inspection has been in force for several years, the conditions are much improved and the number of repeaters are less and less each year. This also, I am glad to say, is true in Norfolk. Medical inspection was instituted here less than two years ago and there is a very noticeable improvement, both in attendance and the number of promotions.

But medical inspection alone is unable to do it all. A great responsibility rests on you—fellow-members of the medical profession of Norfolk. The medical inspectors can only call to your attention the defects found, and it rests

*Read before the Medical Section of the Norfolk County Medical Society, at Norfolk, Va., February, 1912.

with you whether the defects shall be corrected or not. With your hearty co-operation I feel that we can accomplish a great good for the coming generation of Norfolk; without it, we can do very little.

We are only allowed to examine the child and then refer him to his family physician, and it rests with the family physician whether the good that is intended is received, or whether the defect pointed out is spoken of lightly and medical inspection ridiculed or scoffed at.

In no cases are we allowed to give treatment ourselves, or advise children or parents to go to any special physician. In cases where we find, after thorough investigation, that a family is unable to employ the services of a physician, we advise sending such cases to the public clinics of the city.

I am glad to say that it has been my experience to meet with the co-operation of the family physician or specialist in a large majority of the cases I have referred. I sincerely wish I could say all, and I hope the time is near when I can. When that time comes, I believe that the sub-normal child, laggard or repeater, as you may call him, will be reduced to a minimum.

I had hoped to give you a tabulated report of the work done last year, as well as this, but the data was misplaced at the school board office and, consequently, I am unable to do so. I will now give you the results achieved for the first half of the present session:

Number of children examined, 8,943; number of defectives found, 5,264; number treated, 1,590, or 33 1-3 per cent.; number of defects found, 7,205; number treated, 1,782, or 33 1-3 per cent.

This, of course, includes colored as well as white children, and is the reason that the percentage of treatments is so low.

It has been and is still a serious problem to get the negro to respond to the notices sent him in regard to defects found, and we have found that the school nurse has been of inestimable value in this field, as well as with the poorer whites. I will now give a few results in some of the white schools:

Bram. No. 1—Examined, 504; defectives, 426; treated, 210, or 46 1-2 per cent.; defects, 596; treated, 204, or 37 per cent.

A. C. No. 2—Examined, 795; defectives,

347; treated, 204, or 60 per cent.; defects, 422; treated, 232, or nearly 60 per cent.

Bram. No. 1—Examined, 444; defectives, 291; treated, 125, or 43 per cent.; defects, 369; treated, 144, or 40 per cent.

Taylor Building.

Proceedings of Societies, Etc.

NORFOLK COUNTY MEDICAL SOCIETY— MEDICAL SECTION.

Reported by FRANK H. HANCOCK, M. D.

The subject for discussion at the February, 1912, meeting, at which Dr. Charles R. Vance, Chairman, presided, was:

Medical Inspection of Schools.

Dr. J. J. Miller reported his observations upon the results of school inspection. He said that the attendance was more uniform. Children had often stayed away for trivial reasons, such as over-sleeping, or late breakfasts, on account of absent cooks, or a general indifference too often manifested and indulged by their parents. In such cases a District Nurse was sent to the parents to represent to them the importance of the child's regular attendance, to show them that only thus could the best results be secured, and to warn them against such tardiness in the future.

A child that has been absent from school four days in succession is required to bring upon its return a certificate from the Board of Health if the child's absence has been due to contagion, or, if to some other cause, a certificate from the family physician is accepted.

The personal cleanliness of the children has been vastly improved under our system of inspection. Attention is called to soiled hands and faces, and unusually soiled linen, to uncleanly habits, such as biting their nails with dirty fingers in their mouths, or chewing pencils, and how to clean their teeth; in general, they are taught a more presentable toilet. *Pediculus capitis*, or *corporis*, is not infrequently found among the children of the poor; and while it excites no special lesion, it may be detected by the *vigorous scratching*, which seen once is not to be forgotten, the itching caused by this parasite being intolerable.

Children are taught to assume correct positions while sitting in school, and why; to re-

move their wraps and overshoes, and otherwise to care for their frail little bodies, upon the proper bringing up of which depends so largely the welfare of the State.

It is remarkable how quickly children respond to these suggestions given once or twice, and how improvement may be noted not only in their personal appearances, but in the homes where this information is carried, as observed by the District Nurses.

Before this system of inspection was inaugurated, teachers lectured upon hygiene to *assembled classes*—that is, to children collectively—but here the individual child is engaged and examined and talked to privately as concerns its individual case.

Teachers, too, are quick to observe this advantage, and to follow up the particular directions indicated by the inspector, until the especial defect has been corrected, or the untidiness attended to.

Of all the physical defects observed, defective eyesight has been the most pronounced, not that it occurs oftener, but, when found and corrected, the results have been instantly noticeable, the child improving immediately in its class standing, in attention, and in its power of concentration.

Removal of adenoids and tonsils, too, is usually marked by immediate improvement in the child's studies, and more important still in the regaining of physical tone, the child responding as though it had been released from bondage.

In June, 1910, about 85 per cent. of pupils enrolled were promoted after examinations; in June, 1911, 89 72-100 were promoted, the first year of the medical inspection; and though the record has not been completed to February, 1912, Mr. Spence believes that the percentage of promotions will far exceed the percentage of any previous February.

In my schools there were 1,623 pupils examined, showing 1,754 defects occurring in 1,277 children, or 75 per cent.

317 children have received treatment.

351 defects have been corrected.

Of 557 defective nose and throat cases, 100 received treatment.

Of 1,107 defective teeth, 214 were treated; and of 78 defective eyes and ears, 25 were given attention.

Twelve miscellaneous defects were treated.

Dr. Lawrence T. Royster, former President of the School Board, under whose efficient and far-seeing management this system of the Medical Inspection of Schools and the employment of District Nurses was instituted, which has so marvelously benefited this community, expressed his gratification and pride at the part he had been able to play in this epochal undertaking.

For a very long time two great forces had been working in the world of civilization, he said, the one to prevent disease and deformity, and to cure the ills of humanity; the other an educational force, whose sole design was to intellectually equip the individual. Now these two movements, which had worked disjointedly, separately, wholly unconscious each of the other, had coalesced, having recognized each other. And if while moving along parallel lines they were able not only to found a civilization, but to maintain it, these two forces—such a civilization as we are a part of, and as is written of in history—certainly the union of these two mighty potents must result in the perfecting of a race of men that the world has not known in its history, that is beyond computation—men and women grown from children that have been made fit, representing mentally and physically a new order grown from a new science, the result of compelling evolutionary changes in the constitution of human society.

The world's rapid changing from rural communities to urban nations settled upon somebody the necessity of taking care of these condensing populations, looking to the cleanliness of their water supplies, to sewerage, street cleaning, light and air, manufacture, transportation of foods and their purity, and contagious diseases; and these things were undertaken by the medical profession, and so magnificently achieved through its Boards of Health that men have been enabled to live continuously in dense centers of population such as would never have been possible otherwise, because diseases arising from this very association would have driven man from the face of the earth.

Boards of Education and educational influences throughout the world began to see that if they were really to intellectually equip the individual, they would have to take account of that individual's mental capacity, and then they found that the mental capacity was often entirely dependent upon the physical state, and that in turn upon the surroundings; and so

after a while they called over to the medical profession and said, "Come, and help us prepare the best citizen possible, mental and physical for the service of the State, the service of this Republic, and of the World," and the medical profession came, and together they are effecting the most fundamental of changes, rearing a new type of citizen, one that gives evidence of more brilliant promise than his predecessors ever gave or could have given.

And now the State requires the child to go to school (all States do not, but all States will), and it pledges itself not to injure that child, and thereby injure itself, because the very purpose of the compulsion is to create, to arrange for, an intelligent individual, and while enlightening his mind, and enlarging his views, it must be seen to that no physical disabilities ensue on account of this enforced association with other members. Sanitary surroundings must be provided in order that the schools be not the centers of infection in communities they have formerly been, matters of personal cleanliness should be taught and insisted upon, physical defects sought, made record of, and corrected, in order that the child may proceed upon the most efficient base conformable with its endowments of mind and body. In this process of enlightenment has come about the State's intervention in the child's behalf, examining carefully its eyes, ears, throat, nose and mouth, searching for any physical deterrent that may be responsible for its retardation, and, finally, classifying it strictly according to its measure, without regard to its age, its size, pecuniary or social state.

And so the quick and the slow, the sound and the sick, are no longer grouped together; the child that is *near-sighted* is placed *nearer* the blackboard, so that *he, too, can see the figures*, and thereby understand the nature of the example that has been displayed there for the purpose of being seen; and the child *that is deaf* is placed *nearer the teacher, that he may hear what the teacher, sent there by the State to teach him, has to say*. Thus, the attention and interest of both the myopic and the deaf are secured because of this intelligent consideration which was never conceived of under the old scheme of age classification. With the changing of American life from an agricultural people to a race of dwellers in cities and towns, there has come correspondingly a change from

the old three months winter term of two or three years schooling to a ten months term of six or seven consecutive years in less healthful surroundings. With this came a crowded curriculum and the requirement of a higher standard of efficiency; and very soon children began to fall down before these demands. There was an increasing number of "failures," so many in fact that school men, in order to designate them and remove the confusion, had to add to their vocabularies, and we have now such words in this new specialty as "backward," "retarded," "repeater," "sub-normal," "failure." In fact, so many pupils "failed" to keep up with their classes that it looked for a while as if the majority of them would enter the ranks of these retrograde classifications. It was necessary to stop here, therefore, and take stock of this situation, and the school man did. He instituted physical exercises, ordered more recesses, and talked about fresh air and sunshine, but still the repeater came; the myope remained indifferent to the blackboard's display, and the deaf child looked weakly in the direction the others were looking, but was a dullard still. Then the school man said it was beyond him, and he called the doctor, as has been mentioned before, and the doctor said, "Put glasses on that child, and he will understand"; "Remove the tonsils and adenoids from the little mouth breather that doesn't hear, and is trying so hard to get oxygen that he hasn't time to get his lessons, and he will take his proper place with the normal child," and the school man did, and his "failures" and his "repeaters" became less and less, until now they are below 10 per cent., and soon will be a mere trifle.

The Binet test is the best test for the scientific classification of children, and it is being applied in Norfolk by Dr. Doyle, of the Medical Examiners, who spent sometime in Vineland, N. J., especially studying and fitting himself to make that test.

Finally, Dr. Royster said that the employment of trained nurses, known as District Nurses—one nurse for each examiner by the Norfolk School Board, was nearly as important as the system of medical inspection itself, because they were present with the doctor when he made his examination, took careful notes, and afterwards visited the child's home—and often a very uninformed home it is—and there continued the lesson in sanitation, the instructions as to personal cleanliness, mouth

hygiene, fresh air, soap and water; and, lastly, kept note of the physical defects found by the examiner, insisting upon their correction, arranging for it where possible, and often wearing down parental opposition by personal influence, and the sheer persistence of persuasive argument.

Dr. Charles J. Andrews, Bacteriologist for the city of Norfolk, offered the results of the following interesting experiments that he had made. *Dr. Andrews* made this experiment in order to understand for himself just what the situation is, or usually is, with the ordinary school child's throat. Several times in the past two years in making their school tests, the Medical Examiners have sent children home from school because of the suspicious look of their throats, and in one or two instances the Examiners found that the children had returned to school the next day, with the statement that their family physician had said they might do so, "there being nothing the matter with them." Startled by this reckless disregard of community interests, and the imminent danger the other children might be in, and remembering how their first duty always was to detect the presence of, and to prevent contagion, they hastily took smears of these suspicious looking throats. The smears later showed the presence of diphtheria bacilli under the microscope.

The replies of the family physicians were that diphtheria bacilli might be found indiscriminately in children's throats, that some of them were diphtheria carriers. Now, in order to quash that defense or to establish it, *Dr. Andrews* proceeded to examine the throats of healthy school children, and in the course of the experiment had several hundred examined; as a result, *he had not found diphtheria bacilli in a single case of a healthy throat*, and those few cases in which the bacilli were found were the suspicious ones sent home by the Medical Examiners, and thus another "bogey" hard hit reels on to extinction.

Personally, *Dr. Andrews* does not believe that this bacillus stays long in the throat of a healthy child without manifesting its presence by the constitutional or local disturbance it creates.

Dr. Andrews here exhibited some pictures of the *Norfolk Day Nursery*, where tots from one to ten years of age, whose mothers were working, were romping and feeding under the care of trained nurses, none the less happy or hungry

because they were in the care of the State.

And thus, apparently, as time goes on, the State will assume direction, beneficent and instructional, over the individual from his birth to his majority.

Dr. Wm. L. Harris confessed himself much disturbed by these pictures of the poor school children described by the School Examiners in the recital of their experiences. Those cases *Dr. Miller* had seen where sets of permanent teeth were growing irregularly outside of the temporary teeth, which they had not been able to displace unassisted, the interstices and cavities of which were filled with odorous food, paper particles, sticks and gum, were particularly affecting, and made us restless to relieve the unsightliness, the deformity, the maiming and disfiguring of these helpless children, to supply the supervision and direct attention which they needed so signally.

He was glad of the early conference arranged for between the Association of Dentists, and the School Board, which was so surely to result in the relief of this vital want.

Dr. Charles A. Saunders hoped for an early free dispensary where children might go and have their adenoids and tonsils removed, their eyes refracted, and the other disabilities attended to that were pointed out to them from time to time by the Medical Examiners. He knew of twelve or fifteen such defects now that had not been corrected because of financial inability upon the part of their parents to do so.

Dr. Lloyd Williams reported that on Saturdays at the Outdoor Department of St. Vincent's Hospital several school children applied each week for the correction of such deformities and defects, and that the services were cheerfully performed, and he hoped *Dr. Saunders* would send his cases along.

Dr. J. J. Miller, of the School Examiners, thanked *Dr. Williams* for the great kindness he had shown, and the patience he had exhibited in correcting the eye, ear, nose, and throat cases sent to him; remarking that often the operative procedures were too delicate to be done in the clinic with the means at hand, and that *Dr. Williams* had in those cases taken these little gamins to his office and there supplied, freely, the most expensive of appurtenances, and all the care and tenderness that could be exhibited by any man to any child.

Section adjourned.

Analyses, Selections, Etc.

Vomiting in Infants.

H. Lowenberg, Philadelphia, remarks that as a cause for vomiting, congenital pyloric obstruction is too rarely recognized. All cases of vomiting beginning at birth or shortly thereafter and continuing in spite of a reasonable amount of food manipulation, especially in breast-fed infants, or in artificially-fed ones as well, and associated with evidences of malnutrition, are to be regarded as cases of pyloric obstruction, until it can be proved that they are not. Vomiting, propulsive in character, occurring immediately, but more often from one-half to two hours after, the taking of food or drink, sour and fermented as a rule, accompanied by visible peristaltic waves in the epigastric region, not necessarily reversed, with evidences of gastric dilatation and intestinal collapse, with partial or complete constipation, with or without a palpable pyloric tumor and a varying degree of emaciation depending upon the duration of the case, is usually indicative of complete or incomplete pyloric obstruction, and calls for treatment other than the usual medicinal or dietetic remedies. If complete obstruction can be proved, and it often can, surgery, usually a posterior gastroenterostomy, offers the only hope. If incomplete obstruction or pylorospasm be the cause, evidenced by partial constipation and stationary weight, lavage, gavage, rectal feeding and the bromides may accomplish a cure.

In direct opposition to this fatal type of persistent vomiting should be mentioned a type of persistent vomiting or "spitting up" of an entirely benign nature. This occurs in either perfectly healthy breast-fed or bottle-fed babies who persistently continue to thrive and to gain in weight. An adequate explanation for its occurrence is difficult or almost impossible of determination, and no treatment seems to be of avail. Dietetic manipulations usually give no help, and, as a rule, do harm by interfering with the infant's nutrition, making the weight stationary or causing a loss. It continues until it is spontaneously arrested. The breast-fed milk, by repeated analysis, is found perfectly normal. While a cause for it undoubtedly exists, the most plausible explanation is a vicious

habit, which, perhaps, has its origin in faulty hygiene. The condition may be only cautiously diagnosed, and a good prognosis given when all other probable causes have been entirely excluded.—*Journal A. M. A., January 20, 1912.*

Supplementary Home Treatment of Septic Wounds.

S. W. Moorhead, Philadelphia, to lessen the burden on attendants of the dispensary and on internes, adopted the practice of having the patients change the dressings on their wounds at home with the most satisfactory results. The fear that the imperfect asepsis attending this would in many cases serve to discount the good results accruing from the more frequent changes was found to have been without foundation.

If the wound was of such nature that it might reasonably be supposed that in the course of twenty-four hours—that is, before the time for the next dispensary visit—pus would collect in such quantities that it would be present under pressure so that an extension of the process would ensue, or if the infection was already making rapid progress; and if the mentality of the patient was such that he could be expected to remember to carry out the simple directions given him, the case was deemed suitable for home treatment.

None of the various antiseptics were ever prescribed. Plain boiled water, or normal saline solution, or a solution of sodium chloride and sodium citrate were employed as being at once harmless and inexpensive. The last named was the one oftenest used, and was found particularly beneficial when a considerable degree of cellulitis was present. The patients were supplied with a mixture of the two salts, four parts of sodium chloride and one part of sodium citrate; and were directed to dissolve two to three level teaspoonfuls in a glass of hot, boiled water. This gave a solution of approximately four per cent. sodium chloride and one per cent. sodium citrate (such as has been recommended by Wright), the sodium chloride being of hypertonic strength, serving to cause a flow of serum from the tissues into the dressings, while the citrate prevented coagulation by precipitating the calcium salts. The exact strength of the solution seemed to make little difference.

Whenever the location of the wounds permitted, the patients were directed to place them

directly in the solution, keeping the latter as hot as it could be borne, for from ten to thirty minutes, removing as much of the pus before and after the treatment as could be done by very gentle pressure. After the soaking, they were to dress the wounds with pieces of sterile gauze wet with the solution, the dressing being prepared prior to the bathing of the part.

The advantages of the method consist in a decrease in the amount of pain and in diminished destruction of tissue by virulent processes, and in the time required for repair, and, therefore, a decrease of the number of return visits that it is necessary for these patients to make, with a consequent saving of the surgeon's time and of the hospital's surgical supplies.—*Therapeutic Gazette*, February, 1912.

Posture of the Lying-In Patient.

Mosher, in the *American Journal of Obstetrics*, October, 1911, discusses this question and says that his own method has grown from the observation of 2,700 cases of labor seen in private practice and in the clinic in an experience of twenty years. He was taught as a student to have the woman on her feet on the tenth day. This rule was *ex cathedra*, and admitted of no discussion. It is no doubt of good average limit for those mothers whose circumstances compel them for economic reasons to early resume their responsibilities, regardless of future conditions of the pelvic organs. In recent years, however, he has found that all women are not given the same recuperative powers after labor any more than all men are created free and equal, two arguments that are based on wrong premises.

The number of women who have prolapsus and retrodeviations taught him, he asserts, that there was a cause for such conditions. He attributes these conditions to relaxation and subinvolution, which, he believes, is benefited, if not cured, by rest in bed during the time the lochia rubra persists. Consequently, he made a rule years ago that the woman should be on her feet when she can have a record of two days in which no red color is shown. This puts the average patient up about the fifteenth day. She walks to a chair, is up an hour, increases the limit daily as she shows recuperation, judging by the lochia and the height of the fundus. He examines her the fourth week, and cautions her to lie down a part of each day through the

sixth week. He has had the fundus at the brim by the ninth day and the lochia serosa at the same time, and has had the patient in bed eighteen and twenty days. Usually, she may be up half the day the third week and out the fourth week, but he finds a routine practice during the first ten days of raising the head of the bed eight or ten inches an advantage in assisting drainage without subjecting the patient to any effort or exertion as is done when on the back rest. Our American women of the better class are not to be compared with the German peasantry, so that conclusions drawn from hospital statistics of the latter class cannot serve as a criterion for us in putting the patient on her feet. On the other hand, the modern young mother of the present generation who has had an education and an opportunity to live the normal life under direction of her adviser will be found to come through her ordeal in better shape by the adoption of the conservative rule than if she followed the heroic teachings of our brothers across the sea.

As to the posture in bed, the patient is allowed to be turned on her side after the first few hours. This gives her a sense of comfort after the long-enforced cramped position on her back with her knees flexed, as she was during labor. The writer asserts he has never been unfortunate enough to see a case of embolism following labor, but appreciates that one is never too old to learn.

As to emptying the bladder, his early teaching was that in case of laceration requiring repair to put a binder around the knees, and always catheterize. In the light of present-day methods, this plan is inexcusable from any point of view. His students are instructed to make the catheter the last resort. The patient is to be urged to use the pan while lying on the back, with various devices of pitcher, douche and water poured from a height into a vessel or from a faucet, to aid by suggestion the emptying of the bladder. If these expedients fail, she may be gently turned on her face, lying across the pan to aid by gravity the expulsive effort. Then, as a last resort, rather than catheterize, she is, if the pulse is ninety or under, allowed to be helped out to the jar, which, giving her the upright posture, usually accomplishes the desired result.

The question, then, is one in which there has been room for great divergence of opinion

throughout the history of midwifery practice. His friend, the late Dr. Theophilus Parvin, whose writings he considers to rank with those of Charles D. Meigs and Sir Thomas Watson as examples of medical classics, quotes Sydenham, whose wise observation taught him that in the case of those who died after childbirth the result was in many instances from getting up too soon, that is, before the tenth day. The axiomatic statment of Dr. Churchill, the famous obstetrician, was that for one evil result from error in diet he had seen ten from assuming an upright attitude or too early leaving the bed. Dr. Parvin closes his argument with the advice that it is better to keep a woman a week too long in bed than to have her up a day too soon. The condition of the woman is a better criterion than the number of days after labor. While sitting up in bed may be permitted for most patients during their meals after the third day, it is better that the puerpera remain in her bed at least three weeks.

So while a number of men who have favored a policy of extreme rapidity in the putting of patients on their feet have been able to produce arguments which, if always based on facts, must be very convincing as to the individual instances, still, on the other hand, the majority of the profession during all the ages adhered to the more conservative method. The author would, therefore, make a plea for more uniformity in teaching the subject of posture in the puerperium, basing the conclusions upon his own experience as well as upon the observations of obstetricians in the great maternity hospitals, as to the effect upon these cases as regards involution and recuperation where the two extremes are practiced.

In the meantime, the rule to be laid down from the present state of knowledge is that the involution of the uterus, the color of the lochia and general condition of the individual patient must govern the conduct of the case, rather than an arbitrary time limit based upon the number of days following delivery.—(*Ibid.*)

An unique feature of the New Dispensary of the Medico-Chirurgical College and Hospital, opened in Philadelphia, March 7, is that many of the rooms are lighted altogether by skylights, thus insuring privacy with an abundance of light.

Editorial.

Special License Tax on Physicians.

To the Editor:

Doubtless, the members of the Medical Society of Virginia desire to know what our Legislative Committee has done in regard to the bill for the repeal of the special license tax on physicians. We feel that they are entitled to know what we have been doing, and what the present status of our case is.

The *Semi-Monthly* has always been active in support of this proposition, and kept its columns at our disposal for the furtherance of our work. It furnishes the best medium through which to address the doctors of the State, therefore we request space for the following statement:

In accordance with our plans, as set forth in our report to the Medical Society of Virginia in 1910, and again in 1911, we presented a "Brief" to the Virginia Tax Commission setting forth our arguments and praying for the repeal of the State license tax.

We had reason to believe that this body would recommend its repeal, and that this recommendation would receive favorable consideration at the hands of the General Assembly. After taking this step there was nothing further for us to do until their report should be made public.

Unfortunately, it was not until late in December, 1911, that we learned that no recommendation had been made either for or against us. As far as we can learn, the chief reason the Commission had for not recommending the repeal was that the State's finances were in such a condition as not to justify it at this time.

It is needless to say we were greatly disappointed that our efforts in this direction were fruitless.

The legislative session being near at hand, it became necessary for us to decide upon some other course of action.

In going over the situation the first fact that forced itself upon our attention was that of the \$200.00 appropriated by the Medical Society of Virginia at its last meeting for the conduct of our work, less than \$150.00 remained in the treasury after having paid the deficit incurred during the past year.

Another fact was, that to conduct an active fight to force our bill through would require that the chairman and the Richmond members

of our committee sacrifice their time from their practice and be on the ground during the greater part of the legislative session.

In addition to this, the cry of financial distress, which so effectually blocked our way two years ago, was again being raised on all sides.

Since the legislative session of 1908—when the State treasury was full, and appropriations were made with a lavish hand—the plea that the State is bankrupt has made success for us practically impossible, despite the fact that our claims were generally acknowledged to be just.

In the face of such conditions it was apparent that, with no pressure of public opinion to back us, and with no great political power of our own, it would be practically impossible to force a measure through that would deprive the State of \$44,000.00 revenue annually. Therefore, in view of the small amount of money on hand with which to wage our fight, and the large demand on the time of the chairman and the members of the committee which an active campaign would entail, we began to cast about for some plan by which we might obviate these difficulties.

After thoroughly going over the situation, and advising with those in a position to judge of such matters, we decided that it would be better not to introduce our bill as an independent measure, but to attach it as an amendment (in committee) to one of the general tax bills introduced at the recommendation of the Tax Commission. This plan was based on the belief that the bills for which the Tax Commission stood sponsor would have the support of the leaders of the General Assembly, and would therefore be passed. By amending one of these bills so as to include our own, we would secure the support of those backing the bill, thus amended, in bringing the matter up for consideration on the floor.

We reasoned that in this way we would be able to get our proposition voted on, and that we would have sufficient votes to carry it through.

There is no doubt that we could have succeeded in carrying our amendment through the Finance Committee of both Houses, but, about the time we were prepared to act, it became apparent that the bill we proposed to amend was doomed to defeat, as were all the measures advocated by the Tax Commission.

mission had gained such strength as to preclude any possibility of the adoption of any of the reforms advocated by them. It was, therefore, impracticable to get our bill in as an amendment. The only alternative that remained was to introduce it as an independent measure and attempt to force it through, or not to introduce it at all.

The chairman, who was on the ground most of the time up to this stage, not being willing to assume the responsibility of deciding what course to pursue, called a full meeting of the committee, in Richmond, to which call every member responded.

We went carefully into every phase of the situation and unanimously decided that it was not only necessary, but more wise to rest our case for the present for the following reasons:

First. We did not have ample funds with which to conduct a campaign such as would be necessary in order to succeed.

Second. It would require an additional sacrifice of time on the part of members of the committee, which could be ill afforded.

Third. The finances of the State being in such a deplorable condition made success highly improbable.

Fourth. In our judgment, it would be better not to make an attempt than to do so and suffer another defeat.

This is intended only as a brief preliminary statement for the satisfaction of those interested. The subject will be more fully stated in our report to the Medical Society of Virginia at its next annual meeting.

GEO. A. STOVER, M. D.,
Chairman.

South Boston, Va., March 9, 1912.

The old proverb, "It is a long lane that has no turn," would seem aptly to apply to the course the physicians' repeal of the special license tax bill took in the Virginia Legislature. Despite a bright outlook at the start, all reasonable expectations were upset, and practitioners of medicine in this State must carry yet longer the unjust burden they have borne for years.

The cause of defeat is explained in the preliminary report of the Legislative Committee of the Medical Society of Virginia, Dr. Geo. A. Stover, chairman, and is printed in our editorial columns because of its great local interest.

The Committee worked faithfully, and mem-

bers of the profession not on the ground can scarcely appreciate the sacrifice of both time and personal interests, especially on the part of the Chairman, incurred in their endeavor to secure favorable consideration of the measure. The disappointment is no more keenly felt by anyone than by them. The Committee cannot, however, feel that their work will count for naught, for their efforts have created a kindly feeling among many of the legislators, and should undoubtedly bear fruit at the next session of the General Assembly.

Grace Hospital,

The private sanatorium of Drs. H. Stuart MacLean and Robert C. Bryan, of Richmond, Va., located at the corner of Monroe and Grace Streets, was opened March 12th for public inspection, patients being received the following day. Apparently every detail in construction and equipment for the care and comfort of both patients and attendants has been looked after, expense seemingly having been of secondary consideration in making the hospital complete and up-to-date. Simplicity with elegance are to be noted on all sides. Bedrooms are furnished with every convenience, including long distance telephonic connection. The call for nurses is by the silent electric light signal. Ventilation is by the most approved methods, and cleaning is done by the vacuum system. The building is fire-proof, and while at present it is but four stories high, foundations have been laid for additional stories when this seems necessary. The operating room, which is on the first floor, is large and well lighted, being surrounded for about one-third of its circumference by glass. An electric elevator is so situated that it descends into the anesthetizing room. A training school for nurses will be run in connection with the hospital.

Virginia to Have Vital Statistics Law.

During the last few days before the closing of the recent General Assembly, a bill of great interest to doctors as well as lawyers—that requiring the registration of births and deaths in this Commonwealth—was enacted. It will become a law in June of this year, after which all births and deaths will have to be reported. The State Health Commissioner shall be the State Registrar of Vital Statistics, and shall be assisted by other registrars in the various cities, towns and magisterial districts of the State.

The form of certificate used by the United States Census Bureau will be adopted.

So much has been said of the need of this law for tracing and controlling epidemics, and of its advantages in many ways, that we trust our doctors everywhere will do all in their power to render the State Health Department such assistance as will make it effectual.

The Close of Volume XVI.

In bringing the present volume of the *Semi-Monthly* to a close, we wish to express to our patrons and friends our appreciation of their co-operation during the past year, and to say that in the future, as in the past, it will be our endeavor to maintain the journal on the same high principles adopted and followed in the past. The index for this volume shows a total of more than 150 original communications, exclusive of the large number of analyses, selections, etc., our contributors representing seventeen different States.

Personally, we feel that much praise should be accorded the members of our Editorial Staff for their work and their interest expressed in many ways.

The U. S. Civil Service Commission

Announces an examination to secure eligibles from which to make certification to fill a vacancy in the position of research bacteriologist in the Philippine Service. Applicants should be men between the ages of 18 and 40 years, and must show that they have specialized extensively in bacteriology and are capable of doing research work. The salary is \$2,500 a year with increase up to \$5,000 upon promotion. Application, properly executed, should be filed with the Commission at Washington prior to the hour of closing, April 6, 1912.

The Patrick-Henry (Va.) Medical Society

Met at Martinsville, January 9th, with the president, Dr. J. W. Simmons, in the chair. Several interesting papers were read and discussed by the members present. At the close of the meeting, the following officers were elected for the ensuing year: President, Dr. C. H. Ross, Bassetts; vice-president, Dr. J. R. Anderson, Martinsville, and secretary-treasurer, Dr. R. R. Lee (re-elected), Martinsville.

The next meeting will be held early in April at Martinsville.

Meeting for Discussion of Mental Diseases.

Under the auspices of the West Side Branch of the Chicago Medical Society and the Chi-

Chicago Medical Society, a meeting will be held in Chicago, April 17-19, 1912, for the purpose of discussing mental diseases in their various phases. Alienists and neurologists interested in this work may accrue additional information from the president of the West Side Branch, Dr. W. T. Mefford, 2159 W. Madison Street, Chicago.

Home for Feeble-Minded Women to be Established in Virginia.

One of the best laws, from a humanitarian as well as an economic standpoint, passed by our General Assembly, was that for the establishment of a colony for the feeble-minded women of child-bearing age in Virginia. It is to be run in connection with the Epileptic Colony, located just outside of Lynchburg, and \$15,000 was appropriated for its use for the next two years.

Surgeon-General Lynch Resigns.

Dr. Junius F. Lynch, of Norfolk, has recently tendered his resignation as Surgeon-General of the Medical Corps, Virginia Volunteers, a position he has held for several years. He has been prominent in the Virginia Volunteer Service for more than fifteen years, and his faithfulness to duty will cause the announcement to be received with genuine regret in military circles.

Two Medical Journals Consolidate.

Beginning March, 1912, *The American Practitioner and News* of Louisville, Ky., and *The New England Medical Monthly*, of Boston, Mass., will be combined under the title of *The American Practitioner*. It will be issued in New York City, monthly, under the editorship of Dr. John W. Wainwright.

For Sale—Unopposed country practice in Tidewater section of Virginia, with ten room residence, barn, etc., by doctor who wishes to specialize. An excellent neighborhood in fine farming section, convenient to churches and schools. Roads good. Nearest physician, twelve miles. For full particulars, address H. J. K., care this journal.

Obituary Record.

Dr. Daniel J. Coleman,

Another of Richmond's prominent physicians died at his home in this city, March 17th, from pneumonia, after an illness of about one month,

though he had been in bad health for a year. Though of Irish descent, he was born in Richmond, forty-six years ago, and after the usual academic education received at the Catholic schools, he studied medicine at the Medical College of Virginia, graduating in 1884, when only seventeen years of age. For a number of years he was associated with Dr. Geo. Ben Johnston, in the practice of his profession, and taught in various capacities at the Medical College in Virginia until 1904 when he was elected professor of obstetrics and diseases of the puerperal state, which chair he held to the time of his death. He was prominently identified with the interests of the Catholic church in this city, and had won the high esteem of the medical profession in the State and local societies of which he was a member, as well as of a host of patients by whom he will be greatly missed. His wife and three children survive him.

Dr. George Stanton Hamilton,

A prominent physician of Fauquier County, Va., died at his home at Lakota, March 3d, after a lingering illness, aged 82 years. He studied medicine at the University of Virginia and Jefferson Medical College, graduating from the later in 1854, and continued active in his profession until about a year ago when he was paralyzed. His wife and a number of children survive him.

Dr. W. B. Webb

Died at his home at Cross Keys, Va., March 7th. He was born in Orange County, Va., eighty-five years ago, and had been a prominent figure for a number of years in Republican circles, having served one term in the House and two in the Senate of our State Legislature. A daughter survives him.

Dr. J. P. Gilliam,

A retired physician of Chesterfield County, Va., died at his home at Winterpock, March 17th, aged seventy-five years. He received his medical degree from Jefferson Medical College in 1857, and served throughout the War Between the States, at the close of which he returned to his home in Chesterfield County. Shortly afterwards he was elected treasurer of that county, which position he held for thirty-five years, until the beginning of the present term, for which he was not a candidate. He was unmarried.

INDEX TO VOLUME XVI.

[APRIL, 1911—MARCH, 1912, INCLUSIVE]

VIRGINIA MEDICAL SEMI-MONTHLY

This Index is divided into TWO PARTS---FIRST, **Index of Contributors**; SECOND, **Index of Subjects**; in which italicized lines represent original articles.

Notices of books, colleges, hospitals, journals, deaths, personals, proceedings of societies, etc., are indexed in the INDEX OF SUBJECTS under the respective words, **Book Notices, Colleges, Hospitals, Journals, Obituaries, Personals, Society and Board Proceedings, Etc.**

INDEX OF CONTRIBUTORS

DR. R. T. AKERS, Alum Ridge, Va.	540	DR. IRA M. HARDY, Washington, N. C.	609	DR. D. W. PRENTISS, Washington, D. C.	273
DR. HORACE T. AYNESWORTH, Waco, Tex.	265	DR. STEPHEN HARNSBERGER, Catlett, Va.	378	DR. L. T. PRICE, Richmond, Va.	476
DR. J. NORMENT BAKER, Montgomery, Ala.	261	DR. C. LYDON HARRELL, Norfolk, Va.	612	DR. R. L. RAIFORD, Sedley, Va.	399
DR. C. W. BANNER, Greensboro, N. C.	70	DR. GEO. TUCKER HARRISON, Charlottesville, Va.	529	DR. J. E. RAWLS, Suffolk, Va.	157
DR. W. B. BARHAM, Newsoms, Va.	123	DR. C. M. HAZEN, Richmond, Va.	205	DR. F. P. REYNOLDS, Fortress Monroe, Va.	511
DR. CHARLES E. BARNETT, Fort Wayne, Ind.	455	DR. J. H. HIDDEN, Pungoteague, Va.	193	DR. R. L. RHODES, Roanoke, Va.	292
DR. GREER BAUGHMAN, Richmond, Va.	354	DR. M. D. HOGE, JR., Richmond, Va.	362	DR. E. W. ROBERTSON, Onancock, Va.	322
DR. RICHARD P. BELL, Staunton, Va.	274	DR. A. BARNES HOOE, Washington, D. C.	402	DR. J. W. ROBERTSON, Onancock, Va.	322
DR. A. C. BILLER, Forestville, Va.	427	DR. J. SHELTON HORSLEY, Richmond, Va.	445	DR. CHAS. R. ROBINS, Richmond, Va.	289
DR. J. WESLEY BOVEE, Washington, D. C.	30	DR. J. S. HUNTER, JR., Norfolk, Va.	133	DR. PHILIP S. ROY, Washington, D. C.	449
DR. ROBT. C. BRYAN, Richmond, Va.	89	DR. P. A. IRVING, Farmville, Va.	518	DR. T. ROYSTER, Norfolk, Va.	475
DR. J. A. BURNETT, Marble City, Okla.	559	DR. J. C. JOHNSON, Atlanta, Ga.	137	DR. KIRK AND RUFFIN, Norfolk, Va.	10
DR. GEO. F. BUTLER, Wilmette, Ill.	228	DR. H. E. JONES, Roanoke, Va.	165	DR. G. O. SHARRETT, Cumberland, Md.	120
DR. JOS. T. BUXTON, Newport News, Va.	526	DR. WM. R. JONES, Richmond, Va.	404	DR. W. A. SHEPHERD, Richmond, Va.	153
DR. A. W. CALLOWAY, Asheville, N. C.	320	DR. THOS. F. KEEN, Hamilton, Va.	456	DR. J. L. SHEPPE, Mt. Sidney, Va.	452
DR. E. B. CLAYBROOK, Cumberland, Md.	558	DR. LOUIS A. KLEIN, Philadelphia, Pa.	549	DR. E. H. SHOLL, Birmingham, Ala.	598
DR. C. C. COLEMAN, Richmond, Va.	423	DR. JAS. KRAUSS, Boston, Mass.	434	DR. C. A. SIMPSON, Washington, D. C.	250
DR. C. B. CONKLIN, Washington, D. C.	584	DR. MARY E. LAPHAM, Highlands, N. C.	532	DR. S. G. SLAUGHTER, Lynchburg, Va.	64
DR. T. D. CROTHERS, Hartford, Conn.	605	DR. C. O'H. LAUGHINGHOUSE, Greenville, N. C.	316	DR. F. P. SMART, University, Va.	537
DR. J. J. CRUME, Amarillo, Tex.	247	DR. C. S. LAWRENCE, Winston-Salem, N. C.	243	DR. GEO. A. STOVER, South Boston, Va.	621
DR. M. L. DALTON, Floyd, Va.	483	DR. GEO. B. LAWSON, Roanoke, Va.	290	DR. R. T. STYLL, Newport News, Va.	313
DR. J. S. DAVIS, University of Va.	580	DR. J. NEWTON LEWIS, Roanoke, Va.	20	DR. M. C. SYCLE, Richmond, Va.	271
DR. C. W. DOUGHTIE, Norfolk, Va.	478	DR. J. C. LITTLEFIELD, Cumberland, Md.	42	DR. CYRUS THOMPSON, Jacksonville, N. C.	521
DR. M. P. DOYLE, Norfolk, Va.	614	DR. J. J. LLOYD, Catawba Sanatorium, Va.	269	DR. L. A. THOMPSON, National Soldiers' Home, Va.	578
DR. WM. F. DREWRY, Petersburg, Va.	81	DR. H. S. LOTT, Winston-Salem, N. C.	278	DR. CHILTON THORINGTON, Montgomery, Ala.	185
DR. JOHN DUNLOP, Washington, D. C.	94	DR. H. STUART MacLEAN, Richmond, Va.	417	DR. G. B. TRIBLE, Norfolk, Va.	508
DR. C. E. DYER, Ivanhoe, Va.	245	DR. L. O. MAULDIN, Greenville, S. C.	588	DR. HUGH H. TROUT, Roanoke, Va.	297
DR. LLEWELLIN ELIOT, Washington, D. C.	190	DR. J. J. McCORMICK, Norfolk, Va.	368	DR. A. L. TYNES, Staunton, Va.	112
DR. ROY K. FLANNAGAN, Richmond, Va.	142	DR. STUART McGUIRE, Richmond, Va.	546	DR. GEO. K. VANDERSLICE, Phoebus, Va.	370
DR. J. C. FLIPPIN, University, Va.	50	DR. O. A. M. McKIMMIE, Washington, D. C.	162	DR. GEO. TULLY VAUGHAN, Washington, D. C.	111
DR. A. W. FLY, Galveston, Tex.	215	DR. C. M. MILLER, Richmond, Va.	191	DR. J. RUSSELL VERYBRYCKE, JR., Washington, D. C.	348
DR. D. O. FOLEY, Mt. Jackson, Va.	196	DR. S. B. MOON, Richmond, Va.	582	DR. BENJ. E. WASHBURN, University, Va.	159
DR. ALLEN W. FREEMAN, Richmond, Va.	57	DR. S. B. MOORE, Alexandria, Va.	586	DR. WM. F. WAUGH, Chicago, Ill.	224
DR. FREDERICK GAERTNER, Pittsburg, Pa.	393	DR. T. W. MURRELL, Richmond, Va.	481	DR. CHAS. S. WHITE, Washington, D. C.	301
DR. S. S. GALE, Roanoke, Va.	218	DR. E. W. PEERY, Lynchburg, Va.	237	DR. JOS. A. WHITE, Richmond, Va.	105
DR. WM. S. GORDON, Richmond, Va.	413	DR. W. W. PENNELL, Mt. Vernon, O.	380	DR. J. WARREN WHITE, Norfolk, Va.	198
DR. A. L. GRAY, Richmond, Va.	32	DR. W. L. PEPLE, Richmond, Va.	17	DR. OSCAR WILKINSON, Washington, D. C.	556
DR. A. B. GRUBB, Cripple Creek, Va.	177	DR. M. W. PEYSER, Richmond, Va.	87	DR. E. G. WILLIAMS, Richmond, Va.	365
DR. LOMAX GWATHMEY, Norfolk, Va.	10	DR. CHAS. A. PFENDER, Washington, D. C.	573	DR. TOM A. WILLIAMS, Washington, D. C.	33
DR. S. W. HAMMOND, Norfolk, Va.	258	DR. W. A. PLECKER, South Hill, Va.	601	DR. J. C. WILSON, Philadelphia, Pa.	469
DR. G. P. HAMNER, Lynchburg, Va.	420	DR. WM. PORTER, St. Louis, Mo.	460	DR. JOHN R. WINSLOW, Baltimore, Md.	13
DR. FRANK H. HANCOCK, Norfolk, Va.	430	DR. W. C. POWELL, Petersburg, Va.	253	DR. JOHN W. WINSTON, Norfolk, Va.	590
		DR. W. L. POWELL, Roanoke, Va.	43	DR. O. C. WRIGHT, Jarratt, Va.	341

INDEX OF SUBJECTS

Italics Indicate Subjects of Original Communications, Etc.

- Abdominal injuries, diagnosis and treatment, 43; Differential diagnosis in — in railway surgery, 176; Significance and maladministration of opium in — pain* 463
- Abscess, retro-peritoneal* 305
- Acetonuria, typhoid, severe cases.* 193
- Acne treated by Roentgen-ray.* 134
- Adhesive strapping for pains in sacro-iliac region* 95, 99
- Agalactia, Bier method in* 335
- Aguamiel, therapeutic value of.* 24
- Albumin reaction of sputum in pulmonary tuberculosis, 517; Experience with — milk* 542
- Albuminuric retinitis* 588
- Alcohol, diseases and degenerations due to* 605
- Amputation of leg from utility standpoint* 578
- Analgnesia, spinal* 23
- Anaphylaxis, prevention of* 569
- Anesthesia in rectal surgery, 190, 199; Local — for mastoiditis, 198; Spinal —, 23; Use of — preceded by pantopon, 568; Local — in rectal surgery.* 408
- Ankylosed joints, mobilization of.* 202
- Antiformin in demonstrating tubercle bacilli* 50
- Anus, pruritus of, 357; Malformation of —* 357
- Apoplexy, renal* 91
- Appendicitis, chronic, removal of ileo-cecal fold in, 136, 154; Treatment of —, 157; — in relation to Lane kink of ileum, 423; Diagnosis of —, 127; Conclusions from 130 operations for —, 17; Treatment of advanced cases of —, case report* 20
- Appendix dyspepsia, 388; Obliterative changes in —* 72
- Arsenical preparations as specific remedies in germ diseases.* 166
- Arseno-benzol (see Salvarsan).*
- Arterial changes which lead to non-psychogenic disturbances of nervous system, removal of cause; case reports, 318; Electricity for — hypertension* 517
- Arthritis deformans in relation to intestinal putrefaction* 75
- Asphyxia of newborn* 127
- Autointoxication, diet in gastrointestinal* 210
- Bacillus coli infection, 387; Antiformin method of demonstrating tubercle —* 50
- Bacterins, value of* 73
- Basilar headaches and neurasthenia of ocular origin not usually recognized; case reports* 556
- Baths, comparison of effervescing, 21; Influence of cold — upon glycogen of human beings* 307
- Bier method in agalactia* 335
- Bismuth-iodine paste in discharging sinuses* 570
- Black-water fever* 123
- Bladder, exstrophy of, 38; Cancer of —, 98; X-ray diagnosis in — lesions* 151
- Blood vessels, suturing of, 488; How to obtain — for Wassermann reaction* 153
- Boards (see Societies, etc.).*
- Book Notices.**
- Anders-Boston—Text-Book of Medical Diagnosis* 285
- Ballenger—Treatise on Diseases of Nose, Throat and Ear.* 204
- Bandler—Vaginal Celiotomy* 598
- Barnhill-Wales—Principles and Practice of Modern Otolaryngology.* 101
- Beck—Bismuth Paste in Chronic Suppurations—Diagnostic Importance and Therapeutic Value* 49
- Blakiston's Son & Co.—Physician's Visiting List for 1912* 466
- Boyd—State Registration for Nurses* 518
- Bryant-Buck—American Practice of Surgery, Vol. VIII.* 309
- Cables—Golden Rules of Diagnosis and Treatment of Diseases.* 204
- Cabot—Differential Diagnosis.* 24
- Cattell—International Clinics, Vol. IV., 1910; Vols. I and II, 1911, 203; Lippincott's New Medical Dictionary* 465
- Clarkson—Songs of Love and War.* 492
- Crothers—Inebriety* 362
- Dorland—American Illustrated Medical Dictionary* 492
- Earle—Diseases of Anus, Rectum and Sigmoid* 412
- Ford—Handbook of Regional Anatomy* 362
- Gleason—Manual of Diseases of Nose, Throat and Ear.* 186
- Goepf—State Board Questions and Answers* 518
- Hare-Appelman—Progressive Medicine, Nos. 1, 2 and 3.* 284
- Hare-Landis—Modern Treatment: Management of Disease with Medicinal and Non-Medicinal Remedies, Vols. I and II.* 48
- Harrington—Manual of Practical Hygiene* 309
- Head—Practical Medicine Series, Vols. VIII, IX, and X., 1910, 152; Vols. I, II, III, IV., V. and VI., 1911.* 337
- Hinsdale—Hydrotherapy* 180
- Herr—Care and Training of Children* 232
- Lea & Febiger—Practitioner's 1912 Visiting List.* 442
- Manquat-Gabriell—Principles of Therapeutics* 180
- Mayo Clinic—Papers by Staff of St. Mary's Hospital* 203
- Morris—Dawn of Fourth Era in Surgery* 76
- Morrison—Diagnostic and Therapeutic Technic* 285
- Mumford—Practice of Surgery* 49
- Turner—Handbook of Suggestive Therapeutics, Applied Hypnotism, and Psychic Science.* 336
- Musser-Kelly—Handbook of Practical Treatment, Vol. II.* 76
- Ott—Internal Secretions from Physiological and Therapeutical Standpoint* 76
- Pritchard—Health Hints and Health Talks* 545
- Ross—Gathered Leaves.* 466
- Tahrah—Manual of Diseases of Infants and Children* 284
- Sahli-Potter—Treatise on Diagnostic Methods of Examination.* 545
- Stade—Physical Examination and Diagnostic Anatomy* 76
- Stecher—Treatise on Diseases of Skin* 204
- Tanner—Memoranda on Poisons.* 204
- Tuttle—Principles of Public Health* 204
- Ware—Plaster of Paris and How to Use It* 232
- Wells—Compend of Gynecology.* 204
- Wilcox—Treatment of Disease—Manual of Practical Medicine.* 180
- Brain, surgery of* 215
- Breast, care and management in pregnancy and later, 145; — during puerperium, 257; Diagnosis and treatment of tumors of —* 1
- Bronchopneumonia, treatment of.* 358
- Bursitis, sub-acromial or sub-deltoid mistaken for brachial neuritis* 410
- Calculi, urinary, diagnosed by X-ray* 32
- Cambridge reaction* 77
- Cancer: experimental investigations and pathological researches; can be produced artificially, 393; Why do we get our — cases late? 558; — treated by Roentgen-ray, 133; Increase of, 26; — of breast, 2; — of uterus, 36; — of bladder, 98; Arsenionization in —, 359; — of rectum* 356
- Cardiac diseases diagnosed by drugs* 74
- Cardiospasm* 9
- Cardio-vascular disease, treatment of* 333
- Catarrhs and colds* 74
- Catheter, ureteral, in diagnosis of hydronephrosis, 12; Use of —* 89
- Cecum and kidney, tuberculous.* 73
- Census, institutional* 183
- Cerebral localization, notes on, 417; — tumor simulating hysteria, etc.* 543
- Cerebrospinal meningitis epidemic,* 520
- Child labor law, 234; Errant tendencies of — in school, 126; Sub-normal — in school* 614
- Childhood, surgical conditions of; case reports, 526, 541; Vaccine therapy in diseases of —, 538; Treatment of emphysema of —, 545; Premonitory sign of acute infectious diseases in —* 569
- Chorea, thyroid extract in* 47
- Colds and catarrhs* 74
- Colitis, chronic, 342; Entero —* 452
- Colleges.**
- Medical College of Virginia* 79, 129, 570, 599
- Medico-Chirurg. Col. and Hospt.* 621
- Post-Grad. Med. School of Augusta Co. Med. Assn.* 103
- Tulane Univ., Med. Dept.* 207
- Univ. Col. of Med., Richmond, 129, 570, 599*
- Univ. Med. Col. of Kan.* 312
- Univ. of Va., Med. Dept.* 154, 570, 599
- Colon bacillus infection, 387; Surgical anatomy and mechanism of —* 305
- Consolidation of Virginia's medical schools agitated, 570; — — — not enacted* 599
- Constipation, abstracts of symposium on, 328; Treatment of —* 333, 334

<i>Cord, brain and spinal, present status of surgery of</i>	215	<i>Fibromas</i>	1	<i>Hookworm disease, prevalence and prevention in Virginia, 57; Relation of — — to other diseases, case reports, 61; Economic phase of — —, 213; — — in Tenn, 529; Failure of physicians to diagnose — —</i>	601
<i>Corset, toleration of</i>	335	<i>Fistula, laryngo-esophageal, case report, 254; Repair of vesico-vaginal —, following hysterectomy</i>	39	Hospitals, Sanitaria, Etc.	
<i>Cystoscope in diagnosis of hydro-nephrosis, 12; History and use of —</i>	89	<i>Food therapy in various diseases, 209; Importance of pure —</i>	336	Bellevue Hospital, New York.....	236
<i>Death rates in Japanese War</i>	101	<i>Fractures, operative treatment of, 73; Non-union of —</i>	286	Catawba Sanatorium.....	51, 132, 155, 183, 206, 235, 259, 599
<i>Deaths (see <i>Obituary Record</i>)</i>		<i>Gall bladder and ducts, anatomy of, 590; Surgery of — — —</i> ..	593	Central State Hospital.....	207, 443
<i>Defectives, mental</i>	500, 518	<i>Gall-stones during pregnancy, 41; Symptomatology of —</i>	546	City Hospital, Gaffney, S. C.....	207
<i>Degeneracy, to check mental, 518; — due to alcohol</i>	605	<i>Gastric diseases, late methods in diagnosis and treatment, 6; Treatment of — ulcer</i>	255	City Hospital, Greenville, S. C.....	415
<i>Diabetes, common errors in treatment of, 361; — acidosis treated by infusions of sugar</i>	412	<i>Gastro-enterotomy, indications for, 273; Diet in — intestinal auto-intoxication</i>	210	City Hospital, Lynchburg, Va.....	184
<i>Diarrhea, significance of infants' stools in</i>	320	<i>Genital prolapse</i>	40	City Hospital, Richmond, Va.....	128
<i>Diet necessary in various diseases</i>	209	<i>Germ diseases, analogy; Nature's means of cure, bacteriology; Specific treatment; case reports, 165, 598; Control of —</i> ..	105	Danville (Va.) General Hospital.....	547
<i>Diphtheria, antitoxin treatment of</i>	456, 315, 364	<i>Glands, enlarged, treated by Roentgen-ray, 134; Swelling of lymphatic — in acute infectious diseases</i>	569	Dixie Hospital and Hampton Training School for Nurses.....	547
<i>Disease, vicious circles in, 449; Nature's means of protecting against results of —, 334; — due to alcohol</i>	605	<i>Goitre, exophthalmic, symptomatology, 290; Pathology and chemistry of — —, 292; Treatment of — —, case reports, 297; Analysis of last 50 cases of — operated on at St. Luke's Hospital, 497; Medical aspects of —</i> ..	112	Grace Hospital	623
<i>Diverticuli oesophageal</i>	487	<i>Gonorrhea in female, case report</i>	253, 272	Harrisonburg (Va.) Hospital.....	496
<i>Doctor Moses, 481; Requisites in education of —, 218; Duty of — to himself in face of adequate public prophylaxis, 142; The — and his influence</i>	609	<i>Gonorrheal infection in male, treatment</i>	42	Home for Feeble-Minded Women in Va.....	624
<i>Doctors, where are these? 517; Duties of — named, "Lest We Forget," 316; Va. — and social service</i>	466	<i>Gonorrheic infections, local treatment in</i>	271	Hygeia Hospital	207
<i>Drinking cup, public, Illinois abolishes</i>	287	<i>Gout, diet in</i>	211	King's Daughters' Hospital, Staunton	208
<i>Drug habitues, State sanitarium needed for</i>	177	<i>Gunshot wounds of abdomen</i>	44	Leesburg (Va.) Hospital	600
<i>Drugs, rational use of</i>	413	<i>Gynecology, progress in 1910, 36; X-Ray in therapy of —</i>	515	Memorial Hospital, Richmond.....	51
<i>Drunkards, what Va. should do for her neglected</i>	378	<i>Haematocoele, etiology, pathogenesis and therapeutics</i>	54	National Soldiers' Home of Va.....	285
<i>Duodenal ulcer, diagnosis of, 152; Symptoms and treatment of —, 256; — contents examined, 8; — tube or aspirator, 8; Treatment of — toxemia</i>	358	<i>Hare-lip and cleft palate, important points in operation for</i>	445	N. Y. Skin and Cancer Hospital.....	339
<i>Dysentery, mercury treatment of</i>	166	<i>Headaches, basilar, of ocular origin not usually recognized</i>	556	N. Y. State Hospitals.....	548
<i>Dyspepsia, nervous, diet in, 211; Appendix —</i>	388	<i>Health boards, added laws necessary for, 64; Conservation of —, 286; Need of National Department of —</i>	181	N. C. School for Feeble-Minded.....	51
<i>Dystrophy, muscular, case report</i>	159	<i>Heart, stab wound of, case report, 278; — block upon an interstitial nephritis, 322; — action in influenza and pneumonia of childhood, 231; Myocardium in — disease</i>	412	Olivia Jones Hospital	580
<i>Ear diseases, diagnosis and symptomatology of</i>	247	<i>Hemoglobinuric fever</i>	123	Pine Camp	443
<i>Eclampsia, puerperal, veratrum viride for</i>	491	<i>Hemorrhage, post-partum, treatment of, 529; Value of vinegar in — — —</i>	535	Roanoke Sanitarium	156
<i>Ectopic pregnancy, treatment of</i>	38	<i>Hemorrhoids, internal, operation for</i>	306	St. Andrew's Hospital, Suffolk.....	580
<i>Eczema treated by Roentgen-ray</i>	134	<i>Hernia, obliteration of sac in inguinal and femoral</i>	465	St. Elizabeth's Hospital, Richmond, 468, 572	
<i>Education needful for doctor</i>	218	<i>Herniotomy in inguinal hernias, indications for</i>	586	St. Luke's Hospital.....	79, 207
<i>Effervescing baths, comparison of</i>	21			Virginia Hospitals for Insane and Epileptics	78
<i>Electricity for treatment of arterial hypertension, 517; — for various diseases</i>	332			Virginia State Epileptic Colony.....	443
<i>Empyema in children, treatment of</i>	545			Westbrook Sanatorium	364
<i>Endocarditis, infectious</i>	98			William Byrd Hospital.....	236
<i>Entero-colitis, treatment of</i>	452				
<i>Epilepsy, surgery in</i>	216			<i>Hydronephrosis</i>	10
<i>Exstrophy of bladder</i>	38			<i>Hydrophobia, Report of 400 patients treated at Pasteur Institute of Va.</i>	582
<i>Facial palsy</i>	87			Hygiene, school, 109; Public — in relation to private practice.....	336
<i>Fakirs, triumph for</i>	130			<i>Hyperchlorhydria, diagnosis of</i>	335
<i>Feces, troubles for testing for occult blood in</i>	411			<i>Hyperthyroidism</i>	72
<i>Feeble-minded in Va.</i>	504, 518			<i>Hysterectomy for profuse menstruation</i>	73
<i>Fever (see <i>Typhoid, Blackwater, etc.</i>)</i>				<i>Hysteria simulated by cerebral tumor</i>	543
				<i>Idiots, surgical treatment of</i>	216
				<i>Ileo-cecal fold removed in chronic appendicitis, 136, 154; Case of — rectostomy followed by intestinal stricture</i>	407
				<i>Ilcus, case reports, 402; Medical versus surgical treatment of —</i> ..	224
				<i>Imbeciles, surgical treatment of</i>	216
				<i>Immunity, new conception of</i>	440
				<i>Indigestion, surgical treatment of</i>	157
				<i>Inebriety, N. Y. Board of, 411; Psychotherapy in pschasthenia tending towards —</i>	410
				<i>Infant feeding on undiluted cow's milk, 232; Use common sense in — —, 597; Vomiting of —</i>	619
				<i>Infectious diseases of children followed by appendicitis, 19; Acute premonitory sign of — —</i>	569
				<i>Inflammation, diagnosis of pelvic</i>	380
				<i>Influenza, child's heart action in</i>	231
				<i>Ingrowing toe-nail, treatment of</i>	45
				<i>Inguinal hernias, herniotomy for</i>	586
				<i>Inoculation for typhoid fever</i>	371

- Insane, large number in State hospitals 600
- Insanity, incipient, some salient points in recognition and treatment of; clinical pictures, 81; Increase of —* 501, 518
- Inspection, necessity of milk and ment, 549; Medical—of Norfolk Public Schools* 612, 615
- Intestinal putrefaction a factor in arthritis deformans, 75; Case of — stricture following ileo-rectostomy 407
- Iodine and iodides, random therapeutic notes on* 559
- Joints, ankylosed, mobilization of. 202
- Journalistic.**
- Amer. Jour. of Gastro-Enterology.. 103
- Amer. Jour. of Surgery 496
- Amer. Practitioner 624
- Boston Med. and Surg. Jour. 519
- Buffalo Medical Journal 364
- Interstate Medical Journal 548
- Memphis Medical Monthly 548
- New Eng. Med. Monthly 624
- New Orleans Med. and Surg. Jour. . 236
- N. Y. Medical Journal 468
- Successful Medicine 288
- Virginia Medical Semi-Monthly.... 25
- Juvenile court, Richmond to have. 547
- Kidney in hydronephrosis, 10; Tuberculous — and cecum, 73; — abscess 98
- Labor pains stimulated by pituitrin, 570; Child — law 234
- Lane kink of ileum in relation to chronic appendicitis* 423
- Laryngo-esophageal fistula, case report* 254
- Lavage, pelvic 91
- Laparotomy, advantages in hema-
tocele 57
- Leg amputations from standpoint of utility* 578
- License tax should be repealed, 258; State — — on doctors, 155; Special — — on physicians* 621
- Lung compression for pulmonary tuberculosis 29
- Lupus treated by Roentgen-ray.... 134
- Lying-in patient, posture of 620
- Lymphatic glands, swelling of, in acute infectious diseases 569
- Malaria, chronic, treatment of poisoning 308
- Malleolar sign, external 387
- Mammary tumors 1
- Marriage of whites and blacks.... 489
- Mastoid cases, report of, 13; — operation under local anesthesia, 198; Some — experiences, case reports* 191
- Mayo Clinic, influences and technique, 486; Appreciation of Wm. J. — 488
- Meat inspection necessary 549
- Medical profession, relation to the people, 469; — slang* 488
- Medicine, country practice of, 245; Function, scope and limitations of —, 341; Some imperative problems of —* 434
- Meningitis, cerebrospinal, epidemic of, 520; Two cases of tuberculous — in infants 573
- Menstruation, hysterectomy for profuse, 73; Absent — 72
- Mental defectives* 500, 518
- Mercury as specific in germ diseases 166, 598
- Mesentery, congenital foramen in* 537, 572
- Milk inspection necessary, 549; Experience with albumin —.... 542
- Mobilization of ankylosed joints.. 202
- Morphology, dependence of certain morbidities* 430
- Mosquito as sanitary problem.... 179
- Muscular dystrophy, report of case 159
- Myocardium in heart disease 412
- Myomata of uterus 39
- Navy, report of Surgeon General.. 494
- Nephritis, interstitial, heart-block in, 322; Headache in —, 362; *Chronic — —* 427
- Nephrolithiasis urica, diet in.... 211
- Nervous system, causes of non-psychogenic disturbances removed 318
- Neurasthenia treated by electricity, 409; — of ocular origin not usually recognized 556
- Neurasthenics, gynecological operations on 40
- Neuritis, case reports, 87; Forms of bursitis mistaken for brachial —* 410
- Neurologic diagnosis, some principles of 544
- Nurse, training of, 301; Fable of lemonized —, 304; Trained —*.. 598
- Nutrition, faulty 159
- Obesity treated by electricity.... 332
- Obituary Record.**
- Dr. Herbert L. Adkins 236
- Dr. Carroll Moore Baggarly 284, 340
- Dr. Lewis P. Bailey 548
- Dr. Wm. J. H. Bellamy 416
- Dr. John F. Bransford 392
- Dr. Benjamin Brown 416, 444
- Dr. James Turner Clark 444
- Dr. Dan'l J. Coleman 624
- Dr. John Porter Davidson 443
- Dr. T. M. Deitrick 496
- Dr. Andrew Davison Estill 496
- Dr. Alex. Hugh Ferguson 392
- Dr. J. P. Gilliam 624
- Dr. Geo. Stanton Hamilton 624
- Dr. James H. Hatch 572
- Dr. John A. Hillsman 392, 416
- Dr. Adolph G. Hoen 28, 52
- Judge John H. Ingram 416
- Dr. David F. May 496
- Dr. Edward Sanderson McKean.... 416
- Dr. James McKee 520
- Dr. Hiram Harrison Miller 496
- Dr. Joseph V. Milton 496
- Dr. James L. Munsey 496
- Dr. Edward H. Murrell 572
- Dr. Herbert Milton Nash 79, 104
- Dr. Napoleon B. Nevitt 340
- Dr. Grier McLaughlin Nickell 184
- Dr. Severn P. Nottingham 600
- Dr. James Alfred Pettit 340
- Dr. John M. Phipps 208
- Major James Evelyn Pilcher 80
- Dr. William Warren Potter 28
- Dr. Joseph Price 156
- Dr. Orville Layne Rogers 496
- Dr. William Dandridge Sale 184
- Dr. George Alex. DeSantos Saxe.. 312
- Dr. Cornelius T. Smith, Jr. 416
- Dr. George Holman Sneed 208
- Dr. Richard Thomas Still 52
- Dr. James H. Turner 468
- Dr. Arthur M. Walkup 548
- Dr. Walter Washington 416
- Dr. W. B. Webb 624
- Dr. Forest A. Williams 392
- Surgeon-General Walter Wyman... 444
- Obstetrics, value of vinegar in, 535; More practical training needed in — 337
- Ochsner treatment in peritonitis.. 20
- Oesophageal diverticuli 487
- Operative technique, common errors in* 274
- Ophthalmia neonatorum 109
- Osteopaths endorse Med. Exam. Brd. of Va. 547
- Ovarian operations, conservatism in* 119, 228
- Ozone beneficial in sterility..... 515
- Palate, cleft, important points in operation for 445
- Palsy, facial 87
- Pantopon used before anesthesia.. 568
- Paralysis, spastic, treatment of... 230
- Parathyroids, relation between tetany and removal of 386
- Parturient period, management after* 354
- Pellagra, is it a disease primarily of alimentary tract? Case reports, 137; Treatment of —, 142, 307, 359; Suggestions as to etiology of —, 185; Cause of —*.... 463
- Pelvic inflammation, diagnosis of, 380; — lavage, 91; — tuberculosis and calculi* 92
- Peptic ulcer, treatment for..... 157
- Perineorrhaphy, efficiency of different operations for* 420
- Peritonitis, Ochsner treatment for. 20
- Personals.**
- Dr. William E. Anderson 156
- Dr. Carroll M. Baggarly 79
- Dr. Llewellys F. Barker 104
- Dr. Karl Blackwell 339
- Surgeon-General Rupert Blue. 495, 520
- Dr. S. C. Bowen 184
- Dr. Kenneth Bradford 208
- Dr. E. T. Brady 156, 208, 339, 392
- Dr. J. Fulmer Bright 600
- Dr. O. C. Brunk 103
- Dr. Robert C. Bryan 131
- Dr. M. O. Burke 156
- Dr. J. Kennedy Corss 339
- Dr. John P. Davidson 312
- Dr. Alvah H. Doty 494
- Dr. William F. Drewry 103
- Dr. C. R. Dufour 339
- Dr. N. Thomas Ennett 79
- Dr. W. A. Evans 364
- Dr. J. R. Gildersleeve 131
- Drs. Griffith, Chisholm and Poole.. 312
- Dr. George Tucker Harrison 288
- Dr. Charles M. Hazen 156
- Dr. Hugh Carter Henry 443
- Dr. William H. Higgins 600
- Dr. Blanton L. Hillsman 311
- Dr. John A. Hillsman 340
- Dr. Fred. M. Hodges 600
- Dr. J. Allison Hodges 364
- Dr. M. D. Hoge, Jr. 391
- Dr. Lewis Holladay 132
- Dr. J. Shelton Horsley 495
- Dr. William H. Howell 184
- Dr. Anne Humphreys 329
- Dr. B. F. Jenness 391
- Dr. W. E. Jennings 155
- Dr. Geo. Ben. Johnston 339
- Dr. B. C. Keister 392
- Dr. J. J. Kindred 28, 364
- Dr. Ernest C. Levy 103
- Dr. John J. Lloyd, Jr. 155
- Dr. Lucien Lofton 236, 391
- Dr. L. L. Lumsden 156
- Dr. G. Frank Lydston 236, 572
- Dr. Junius F. Lynch 236, 391, 624
- Dr. H. Stuart MacLean 184
- Dr. Harry T. Marshall 156
- Dr. Charles H. Mayo 496
- Dr. Stuart McGuire 312
- Medical Corps, Virginia Volunteers, 27, 339, 495

Dr. S. B. Moon.....	20	<i>Pupillary reaction in health and disease</i>	70	Assn. Surgeons of A. C. L. Ry.	234
Dr. Samuel Preston Moore.....	414			Assn. Surgeons of N. & W. Ry.	104, 131, 155
Dr. Lewis Coleman Morris.....	184	Pure food and drugs act, criticism of, 130; Flaws to be corrected in ————	183	Assn. Surgeons of Southern Ry. 103, 132	
Dr. J. P. Munroe.....	184			Augusta Co. (Va.) Med. Assn.	79, 260, 363, 391, 415
Dr. Thomas W. Murrell.....	131	<i>Pyelonephritis treated by electricity</i>	410	Bedford Co. (Va.) Med. Society. 132, 494	
Dr. R. H. Newman.....	496			Child Welfare Conference.....	79, 103, 128, 466
Dr. McGuire Newton.....	131	<i>Pyloric measurer and dilator</i>	10	Chi Zeta Chi Fraternity.....	495
Dr. William Osler.....	184	<i>Rabies specimens</i>	156	Conf. of Charities and Correction of Va.	390, 415
Dr. Mark W. Peyser.....	132, 288	<i>Railway abdominal surgery, 176; — sanitation, 178; — injuries and their treatment</i>	478	Conf. of Hookworm Experts.....	259
Dr. Orrin K. Phlegar.....	339			Conf. on Med. Education, Legislation and Public Health.....	520, 571
Dr. Louis J. Picot.....	548	<i>Rectum, anesthesia for surgery on, 190, 199, 408; Foreign bodies in —, 306; Malformation of —, 357; Cancer of —</i>	356	Eighth District (N. C.) Med. Councilor.....	592
Dr. Lawrence T. Price.....	312	<i>Registration area, Kentucky admitted to</i>	235	Guilford Co. (N. C.) Med. Soc.	592
Dr. A. S. Priddy.....	183	<i>Renal apoplexy, 91; X-ray in diagnosis of — lesions</i>	151	Isle of Wight (Va.) Med. Assn.	572
Dr. A. S. Rixey.....	104	<i>Retinitis, albuminuric</i>	588	Latane Anti-Tuberculosis League..	208
Dr. Julian M. Robinson.....	236	<i>Rheumatism, what is it? 75; Etiology and pathology of acute —</i>	584	Loudoun Co. (Va.) Med. Soc.	208
Dr. W. B. Robinson.....	443	<i>Roentgen irradiation, local and general effects of</i>	133	Med. & Chirurg. Faculty of Md.	363
Dr. L. T. Royster.....	156	<i>Roentgenology, uses of</i>	332	Med. Soc. of D. C.	572
Dr. L. M. Schmidt.....	600	<i>Sacro-iliac synchondrosis, lesions of, case reports</i>	66, 94, 99	Med. Exam. Bd. of Va.	132, 184, 279, 443, 547, 564
Dr. Jas. R. Shacklette.....	572	<i>Salvarsan, personal experience with, 218; Remarks on —, 250; Further report of cases treated with —, 476; Later experiences with — at U. S. Naval Hospital, Norfolk, 508; Use of — at Army Hospital, Ft. Monroe, 511; — in treatment of syphilis, 47, 513; — in tabs, 33; Present status of —</i>	360	Med. Soc. of N. Va. & D. C.	131, 415
Dr. George B. Shattuck.....	519	<i>Sanitation in Va. cities and towns, 352; Railway —</i>	178	Med. Soc. of State of N. C.	130, 182
Dr. W. A. Shepherd.....	131	<i>Schools, medical inspection of, 612, 615; Sub-normal child in —</i>	614	Med. Society of Va.	27, 51, 78, 286, 310, 337, 364, 388, 519
Dr. R. M. Slaughter.....	51	<i>Sciatic neuritis</i>	87	Med. & Surg. Society of D. C.	98, 199
Dr. Julian W. Sloan.....	340	<i>Scrofula</i>	439	Meeting for Discussion of Mental Diseases.....	623
Dr. Charles T. St. Clair.....	156	<i>Serums as specific in germ diseases</i>	166	Miss. Valley Med. Assn.	182, 311, 391
Dr. M. A. Stuart.....	391	<i>Sinuses, bismuth-iodine paste in discharging</i>	570	Montgomery Co. (Va.) Med. Soc.	206, 260, 415, 572
Dr. Philip Taylor.....	312	<i>Six hundred and six (see Salvarsan).</i>		Nat. Conf. of State Med. Exam. & Licensing Brds.	548
Dr. E. H. Terrell.....	236	<i>Small-pox in U. S.</i>	182	Newport News (Va.) Med. Soc.	519
Dr. Christopher Tompkins.....	156	<i>Societies, Boards, Etc.</i>		New York Academy of Medicine ...	235
Dr. J. McCaw Tompkins.....	118	<i>Amer. Assn. of Clinical Research..</i>	287	Norfolk Co. (Va.) Med. Soc.	72, 149, 486, 513, 540, 561, 593, 615
Dr. H. M. Tolfree.....	391	<i>Amer. Assn. Genito-Urinary Surgeons</i>	183	Norfolk (Va.) Health Department..	28
Dr. John G. Trevillian.....	312	<i>Amer. Assn. for Study and Prevention of Infant Mortality.....</i>	391	N. C. Assn. of Trained Nurses.....	260
Dr. George B. Triple.....	600	<i>Amer. Electro-Therapeutic Assn.</i>	331, 338, 358, 409	N. C. Board of Health.....	182
Dr. Alfred P. Upshur.....	28	<i>Amer. Hospital Assn.....</i>	547	Northern Neck (Va.) Med. Assn.	391
Dr. William H. Welch.....	51	<i>Amer. Medical Assn.....</i>	102, 181	Patrick-Henry (Va.) Med. Soc.	235, 623
Dr. A. M. Whaley.....	339	<i>Amer. Medical Editors' Assn.....</i>	28, 207	Petersburg Med. Faculty.....	415
Dr. Harvey W. Wiley.....	206, 311	<i>Amer. Proctologic Society.....</i>	51, 260, 305, 328, 356, 407	Piedmont (Va.) Med. Soc.	234, 494, 520
Dr. Robert F. Williams.....	260	<i>Amer. Public Health Assn.....</i>	363	Pi Mu Medical Fraternity.....	468, 495
Dr. A. L. Wilson.....	132	<i>Amer. Red Cross.....</i>	131, 491	Rappahannock Valley Med. Assn.,	311, 364
Pharmacodiagnosis of cardiac diseases.....	74	<i>Amer. Roentgen-Ray Society.....</i>	260, 287, 338	R. I. Med. Soc.....	31
Physical therapeutics.....	333, 358	<i>Amer. Society for Study of Alcohol and Other Narcotics.....</i>	27	Richmond Acad. of Med. & Surg.,	104, 311, 467, 520
Physician's duty to the people....	483	<i>Amer. Society Tropical Medicine..</i>	79	Richmond Bar Assn.....	104, 520
Pituitrin for stimulating labor pains.....	570	<i>Assn. Internationale de Perfectionnement Scientifique.....</i>	548	Richmond Board of Health.....	600
Pneumonia, child's heart action in.....	231	<i>Assn. of Medical Officers of Army and Navy of Confederacy.....</i>	50	Roanoke (Va.) Acad. of Med.....	338
Podalic version, internal, technique and indications.....	174	<i>Assn. of Military Surgeons of U. S.</i>	287, 363	Seaboard Med. Assn.....	235, 414, 467
Poliomyelitis, unusual types of, 309; Acute epidemic —, 152; Treatment of anterior —.....	409	<i>Assn. of S. A. L. Ry. Surgeons.....</i>	363	Shenandoah Co. (Va.) Med. Soc.	183
Post-partum hemorrhage, rational treatment of, 529; Value of vinegar in —.....	535			Shenandoah Valley Med. Soc., 51, 132, 415	
Potassium bromide and passion flower, unusual effects of.....	198			Southern Med. Assn.....	443
Pregnancy, ectopic, 38; Gall-stones during —.....	41			S. Piedmont (Va.) Med. Soc.....	78, 467
President's address before S. Piedmont Med. Soc., 220; — — — S. W. Va. Med. Soc., 227; — — — Med. Soc. Va.	341			Southern Surg. & Gyn. Assn.....	495
Preventive medicine, 130; What — — has done and can do with State's help.....	105			Southside (Va.) Med. Assn.,	132, 155, 260, 311, 468
Prolapsus uteri, case reports, 243, 289; Genital —.....	40			S. W. Va. Med. Soc.....	103, 182
Prophylaxis, doctor's duty to self in face of adequate public.....	142			State Board of Health of Fla.....	51
Pruritus ani, case.....	357			Staunton (Va.) Board of Health....	208
Pseudo-nephritis, thyroid in.....	101			Tri-State Med. Assn. of Carolinas and Virginia.....	494, 519, 546, 599
Psoriasis treated by Roentgen-ray.	134			Va. Alumni Assn. of Johns Hopkins University.....	131
Psychoses, prevention of.....	102			Va. Anti-Tuberculosis Assn.....	312, 415
Psychotherapy in psychasthenia tending towards inebriety.....	410			Va. Board of Health.....	183, 206
Puerperal septic infection.....	41			Va. Board of Pharmacy.....	235
Puerperium, care of breast during.	257			Virginia Health Department.....	27, 79, 235, 242, 312, 443, 495, 513, 571, 600
Pulmonary tuberculosis, 29; X-ray for —, 201; Stereoroentgenographs in diagnosis of —, 359; Albumin reaction of sputum in —, 517; Apex of lung in —.....	517			Va. Pharmaceutical Assn.....	208
				Va. Public Health Assn.....	414
				Va. State Board Pharmacy.....	79, 364
				W. Va. State Med. Assn.....	363
				Sodium citrate in cow's milk for infants' food.....	232
				Spasms in infancy and childhood..	361
				Spastic paralysis, treatment of...	230
				Spinal cord, surgery of, 48, 215; — anesthesia.....	23
				Stab wound of heart, treatment of.	278
				Static electricity.....	332
				Stereoroentgenographs in diagnosis of pulmonary tuberculosis.	359
				Sterility cured by use of ozone...	515
				Stools, significance of, in summer diarrhea of infants.....	320

- Surgical conditions of childhood, case reports* 526, 541
- Suturing blood vessels with new instrument, technic of..... 488
- Synchondrosis, lesions of sacro-iliac 66, 94, 99
- Syphilis and salvarsan, random remarks on*, 250; *Sociological aspect of* —, 455; Mercury treatment of —, 166; — treated with salvarsan, 47, 218, 508, 511, 513; — of ano-rectal region..... 408
- Tabes dorsalis, Wassermann reactions in clinical diagnosis of*.. 33
- Temperature, remarkable ante-mortem rise of 202
- Testicle, operation for undescended 72
- Tetany in infancy and childhood.. 361
- Therapeutics, efficiency of, 205; Bedside — best for average physician, 200; Physical —..... 333, 358
- Thermotherapy 409
- Thread impregnation test for gastric diseases 7
- Thyroid extract in chorea, 47; — in pseudo-nephritis 101
- Toe-nail, treatment of in-growing.. 45
- Tonsils in relation to systemic diseases, 120, 265; — — — — other diseases 239
- Tonsillar bodies, pathology of 237
- Tonsillectomy 475
- Tonsillitis, follicular 460
- Tracheotomy, case reports 162
- Trained nurse 598
- Tubercle bacilli identified by anti-formin 50
- Tuberculosis, pulmonary, treated by compression of lung*, 29; X-ray for — —, 201; Stereoroentgenographs in diagnosis of — —, 359; Method of decreasing —, 516; *Therapeutics of* —, 460; *Home treatment of* —, 473; *Diagnosis of incipient* —, 269; *Transitory physical signs in lungs associated with incipient*.... —, 532; Needs of — patients in Va., 442; Colored people's — day, 548; Albumin reaction of sputum in — —, 517; Apex of lung in — — 517
- Tuberculous kidney and cecum, 73; — meningitis in infants, 2 cases 573
- Tumors of Breast, diagnosis and treatment of*, 1; Cerebral — simulating hysteria 543
- Typhoid fever, treatment of*, 313, 370, 540; — — — —, by mercury, 166; *Sources of infection of* — —, 365; *Symptoms of* — —, 368; *Remarks on symptoms and treatment of* — —, 399; *Surgical aspects of* — —, 111; Liberal diet in — —, 385;.... Important aspects of — — —, 404; *Prophylaxis of* — —, 196; —acetonuria, 193; Control of — — in army by vaccination, 232; *Fashions in* — —, *Review of 239 cases* 580
- Ulcer, treatment of peptic, 157; — — — gastric, 255; Symptoms and treatment of duodenal —, 256; Test for gastric —, 7; Diagnosis of duodenal — 152
- Uncinariasis (see *Hookworm disease*).
- Ureter, stricture and removal of stones from 92
- Ureteral catheter, use of*, 89; — — in diagnosis of hydronephrosis.. 12
- Urethral therapy, meddlesome.... 150
- Urethritis, acute, of chemical origin 101
- Uric-acid theory exploded 490
- Urinary calculi diagnosis by X-ray 32
- Uterus, prolapse of*, 243, 289; Progress in treatment of diseases of —, 36; Control of pain originating in — 46
- Vaccine therapy in children*, 538; Typhoid — 371
- Vaccination law upheld 77
- Vagina, artificial, created 38
- Venereal diseases, laws needed to control, 64; Prevention of spread of — — in Norfolk 561
- Venesection, its uses and abuses*.. 115
- Veratrum viride, usefulness of, 100; — — for puerperal eclampsia 491
- Vinegar, value of, in obstetrics, case reports* 535
- Visceroptosis, etiology and symptomatology of 262
- Vision, defective 110
- Vital Statistics in Va., 493, 599, 623; — — for 1910..... 442
- Vomiting, duodeno-jejunostomy for regurgitant, 72; — in infants 619
- X-ray diagnosis of urinary calculi*, 32; — — and prognosis of pulmonary tuberculosis, 201; — — in renal and bladder lesions, 151; — in gynecologic therapy.. 515
- Wassermann reaction in tabes dorsalis, 33; How to obtain blood for — 153
- Waste and its prevention*..... 521
- Water, method of purifying infected 489
- Wounds, septic, supplementary home treatment of..... 619

